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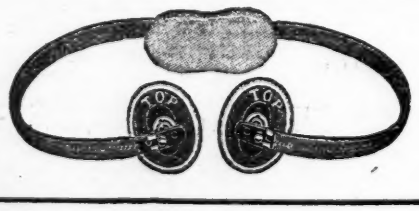

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I shall not discuss the methods of treatment usually adopted. I wish to consider only the question of blood transfusion in eclampsia.

Attention has lately been directed in a leading article in the BRITISH MEDICAL JOURNAL [1] to certain recent immunological investigations. In 1911 Dold [2] showed that saline extracts of many viscera contain a toxin, lethal to animals, which is completely neutralized by normal blood serum. To this toxin he gave the name "*Organgift*." The nature of the substance has, however, not yet been determined, although many investigations have been made. Obata,[3] following the work of Dold and others, has recently made an important contribution to the subject from an obstetrical point of view. This investigator has found that, when an extract of fresh human placenta is injected into mice, symptoms resembling those of eclampsia are produced, and that there is no difference between the toxicity of the extract of placenta from a normal case and that of the extract of placenta from a case of eclampsia. Further, Obata observed that fresh serum from the blood either of a normal person or of an eclamptic patient produces similar symptoms in mice, but no increase in toxicity was noted in regard to the serum of eclamptic patients. When, however, the extract of placenta was mixed with serum from a normal person—and it was found that sex and pregnancy did not affect the issue—the toxins of the placental extract and also apparently of the serum were neutralized; but, on the other hand, the serum from the blood of an eclamptic patient failed to neutralize the toxin of the placenta.

It appears, therefore, that there is some substance in normal blood that neutralizes the toxin of the placenta, and it seems curious that this is present in the blood of males as well as females, until we remember that the fetus is the product of the male no less than of the female.

On thinking over these facts when faced recently with a serious case of eclampsia, I determined to try the effect of blood transfusion, in the hope of introducing an antitoxin into the maternal blood stream. The result was so satisfactory that I have ventured to bring forward the case, although a single one, especially as the treatment of it was based on experimental findings. I would have preferred to wait, but as it may be some time before I have a further opportunity of testing it, and as no harm can result from the treatment properly carried out, I think it only right that the method should have a proper trial at the hands of others, in order that we may know whether blood transfusion may be regarded as a reliable method of treatment.

Abstract of Notes of the Case.

Mrs. E. T., aged 24, a primigravida, in the ninth month of gestation, consulted Dr. D. R. Evans on April 15th, complaining of recurring pains in the back, and pain on micturition. Dr. Evans examined her urine and, finding a large amount of albumin, sent her home to bed. He saw her the following evening, when he found that labour pains had commenced at 5 p.m., and that she had had a "fit." He then administered hypodermically morphine gr. ¼. Other "fits" followed at hourly intervals.

She was admitted to the Liverpool Royal Infirmary at 9 p.m., and was then conscious and rational. A catheter was passed, but no urine was obtained. The eyelids were slightly oedematous. Another convulsion soon occurred, and following this she remained oblivious of her surroundings. I saw her at 10.30 p.m. She was struggling during labour pains, but, otherwise, was indifferent to what was going on. Owing to her restlessness a proper abdominal examination was impossible, but *per vaginam* a fetal head could be felt lying low in the pelvis. I hoped, therefore, that the child would soon be expelled. Another severe convulsion occurred at 11.30 p.m. After this she remained semicomatose. She was then placed under light ether anaesthesia and removed to the theatre, where I delivered with forceps, and without difficulty, twins—a boy and a girl, weighing respectively 5½ and 4¾ lb. The cords were pulsating feebly when the infants, in a state of "white asphyxia," were born; but it was impossible to stimulate respiration. The patient remained semicomatose and restless all night. At 5.30 a.m. another convulsion occurred, followed by a very severe one at 6 a.m. The patient remained cyanosed; 20 c.cm. of urine loaded with albumin was obtained by catheter.

The house-surgeon now opened a vein in the arm, but was unable to bleed the patient, as directed, while saline infusion was being introduced. A quantity of saline solution was, however, run into the vein. I received a message at 8 a.m. to say that the patient appeared to be dying, and that she was more deeply comatose. I saw her as soon as possible (10.30 a.m.), and found her lying quite still, almost completely comatose; her face was of a yellow colour, and her pulse was very soft and feeble. I determined then to try the effect of blood transfusion, and was fortunate enough to obtain the assistance of my colleagues Mr. R. E. Kelly and Dr. Wallace Jones, who have had much experience in this procedure. The husband, a robust-looking young man, willingly consented to be the donor. His blood was found to be in Group IV, so 500 c.cm. were withdrawn into citrate solution from his median basilic vein. Approximately the whole of this was transfused into the median cephalic vein of the patient.

At 1.30 p.m. the patient looked better—the colour had almost immediately been improved by the transfusion; 60 c.cm. of urine, withdrawn by catheter, were found to contain acetone, and albumin to the extent of 12 per cent. The following estimate of the ammonia coefficient was made by Professor Ramsden:

Ammonia nitrogen	0.05 per cent.
Urea	0.48 "
Total nitrogen	0.23 "
Ammonia N / Total N ratio	22.0 "

A few hours later the patient was able to talk rationally; and when the house-surgeon made the evening round she discussed her condition, and said that she had no recollection of anything that had happened previously in regard to her confinement. In the sixteen hours subsequent to the blood transfusion 50 oz. of urine were secreted. A sample was then found by Professor Ramsden to contain "a small amount of albumin." Acetone was absent. The ammonia coefficient was estimated as follows:

Ammonia nitrogen	0.017 per cent.
Urea	0.75 "
Total nitrogen	0.35 "
Ammonia N / Total N ratio	4.8 "

In the next twenty-four hours 71 oz. of urine were secreted. Since then convalescence has been uninterrupted.

Should another case come under my care I shall perform blood transfusion immediately. It may be possible by so doing to save not only the life of the mother, but also that of the child. In such circumstances it would probably be necessary to repeat the transfusion at the end of parturition.

With regard to the method of transfusion employed in this case, citrated venous blood was used, and I noticed that some difficulty was experienced by the house-surgeon in shaking, and at the same time collecting, the blood from the vein, in the flask containing the citrate solution. I think that the blood might best be mixed with the citrate solution by allowing oxygen to bubble through the fluid; moreover, oxygenated blood would probably be better in all cases of transfusion than venous blood.

In conclusion, I wish again to emphasize the fact that this is only one case, and that no final judgement can be formed until many cases have been treated in the same way by competent observers and by those who have had some experience in blood transfusion and who are able to carry out the necessary procedures quickly and safely. It is unlikely that any treatment will ever be introduced which will ensure the recovery of every patient; but, if the present appalling maternal and fetal mortality can be reduced, something will have been accomplished. In those circumstances the preparation of a human antitoxic serum might be worth while in order to simplify treatment.

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A Lecture
ON
PARTIAL PYLORIC OBSTRUCTION.

BEING AN ABSTRACT OF THE THIRD OF THE JAMES WATSON LECTURES ON "SOME CHRONIC GASTRIC DISORDERS." *

BY
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THE causes of pyloric obstruction may be primarily classified into anatomical and pathological; and the latter may be subclassified into (1) those dependent on inflammation and (2) those the result of new growths.

ANATOMICAL OBSTRUCTION.

Congenital Narrowness of the Pyloric Orifice.

This class has received but comparatively slight recognition, but I trust I may be able to show that it plays no inconsiderable part in the group of conditions that obstruct the gastric outlet.

At an early period of my work, when operating for obscure and intractable symptoms indicative of gastric derangements, I now and again encountered a condition of the pyloric orifice which I was at a loss to explain on any other ground than that the opening was too narrow to allow of a free and easy exit of the gastric contents; that this was the source of the chronic gastric disorder received confirmation from the fact that relief and cure followed on the operation of gastro-jejunostomy. After an experience of 7 cases I read a paper before the Clinical Society of London[1] entitled "Congenital narrowness of the pyloric orifice." Later, in another paper published in the BRITISH MEDICAL JOURNAL,[2] 12 other illustrative cases were given. Dr. William Russell[3] of Edinburgh also contributed an exhaustive article on the subject, published in the same number of the JOURNAL, strongly supporting the view that I had promulgated, that such an anatomical condition existed, and accounted for the symptoms met with in certain classes of cases.

Before describing the particular features peculiar to this form of obstruction, I ought perhaps to state what may be considered the normal condition of the orifice as met with by the surgeon on the operating table. Under complete anaesthesia the gastric parietes are more or less flaccid. Externally the pylorus can usually be recognized by the somewhat deeper colour it presents in contrast to the neighbouring parts, and by the convergence of vessels, mostly veins, at its lower margin. Only the faintest constriction is, as a rule, visible, the duodenum often passing so imperceptibly into the stomach that it is only by the tactile sensation afforded by the sphincter and the distribution of the vessels that the exact seat of the pylorus is determined. There is no constancy in the amount of induration (if I may so express it) which the pylorus presents, a fact which seems to suggest that although the patency of the canal may be quite normal, there may be considerable differences in the developmental condition of the sphincter—differences possibly dependent on the same physical causes which may naturally affect other parts of the body. I have little doubt that this variation, when not taken into due account, has led to the difficulty experienced by some in determining whether the greater thickness met with in one case as compared with another is or is not due to some excessive hypertrophic or inflammatory cause. I am, however, convinced that the variation is quite normal, and may exist within considerable limits. Regarding the calibre of the pyloric orifice, I have always found that while the index finger passes easily, it has conveyed to it the sense of a uniformly narrow, elastic ring, which feebly embraces and rolls over the finger as it is gently pushed on into the duodenum. I should consider 12 to 15 mm. the normal calibre during life and under relaxation. If a section of the pylorus is looked at—such, for instance, as is given in *Quain's Anatomy*—a sensation such as that just described is what might be reasonably expected. A uniform ring-like projection of mucous membrane is seen containing within its reduplicated folds bands of muscle fibre.

When, in my earlier cases, I first met with this abnormally narrowed condition of the canal, I was inclined to believe that, if not due to chronic spasm, it was the direct result of the stimulating and exciting influence evoked by the introduction of the finger into the pyloric orifice; that such an indigestible morsel as the index finger, so large, solid, and unfit to pass out of the stomach, was certainly likely to cause contraction of the pyloric sphincter whose chief function is to prevent all but the most efficiently peptonized food passing out of the stomach. However, I had on one occasion a very striking and informing illustration of what the parietes of the stomach and the pylorus are like under contraction. The stomach had been opened for inspection and partially withdrawn from the abdomen with the pylorus in view. The patient seemed somewhat suddenly to come out of the anaesthetic, when a violent contraction of the gastric parietes took place, causing a little of the clear fluid in the stomach to be forcibly spurted out. Immediately there followed contraction of the pylorus, which assumed the appearance of a rigid structure about 2 in. in length, and about the circumference of the ring finger. As the patient again came under the influence of the anaesthetic the parts relaxed; and it was under this relaxed state that I felt a narrow, uniform, ring-like constriction of the pyloric aperture incapable of admitting the apex of the index finger. It was the information gained in this particular case that led me first to doubt whether these narrowed orifices could be the result of a chronic spasmodic condition, and to suspect that they owed their existence to some abnormality in development rather than to any acquired cause.

As to the nature of this abnormality, I am inclined to regard it as due to an excess of reduplication of the pyloric fold, whereby the width of the valve is increased, but the calibre of the canal proportionately diminished; that it is, therefore, purely anatomical and congenital in origin. Such a definition entirely fits the facts revealed in the cases met with, for the obstruction was always perfectly uniform, and simply gave the impression that the orifice was abnormally small; the smaller it was the greater the resistance it offered to the introduction and passage of the finger. Further, it should be emphasized that the resistance was in no sense like that encountered as the result of cicatrization. That, as is well known, rarely gives way, except as the result of a certain amount of laceration of newly formed tissue; while, in the majority of these cases—the exception being those of a very high degree of narrowing—the ring gradually dilates, and uniformly stretches over the advancing finger.

If I have been right in the construction I have put forward regarding the nature and origin of this narrowing of the aperture, it is possible to conceive how we may have, solely as the result of development, any calibre of the pyloric orifice between that which we regard as normal and that which will admit only a small sized—say No. 6—ordinary urethral catheter.

I ought to say, before proceeding further, that, although ignorant of the fact when I first met with the condition just described, subsequent investigation has brought to my notice the description of this same appearance of the part by others. Landerer (quoted by Maier[4]) some years ago seems to have been the first to draw attention to this simple narrowing of the pylorus unaccompanied by any marked thickening or other changes connected with the part. Maier discusses this congenital abnormality; his cases, numbering twenty-one, were necropsies on patients who had died mostly from other causes than those in any way associated with the gastric condition. For some years, therefore, the possibility of chronic gastric disorders in the adult dependent on this particular kind of narrowing of the pyloric aperture has been recognized; but it is only comparatively recently, since the stomach has been explored by the surgeon, that the cause and its effects have come to be more exactly noted, and still further treated. The subject is briefly referred to by Mayo-Robson and Moynihan in their book,[5] where a very typical case illustrative of the condition is recorded.

If further support of the opinions expressed were needed I think it is to be found in the unmistakable evidence generally acknowledged to exist in some other parts of the

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body possessing somewhat similar functions. Thus, there are distinct variations in the calibre of the ileo-caecal orifice; and William Mayo[6] has reported cases he has operated upon in which an abnormal narrowing of the passage between the ileum and the caecum has been the cause of constipation. No evidences of disease of any kind were discoverable to account for the smallness of the valvular aperture; presumably, therefore, the condition had to be regarded as one due to defective development of the ileo-caecal valve. The uterine cervical canal affords yet another analogy, for the passage may be congenitally narrow and prove obstructive to the easy and unimpeded flow of the menses. It is not, perhaps, overstretching the comparison to indicate the great differences that exist in the size of the oral aperture, and in the width of the palpebral fissure, not that any undue smallness of either of these apertures is any impediment to the particular part each has to play in the human economy, only they serve to show, from the obvious natural existence of developmental variations, that any such defect at the pyloric aperture is a perfectly reasonable assumption.

Hypertrophic Stenosis of the Pyloric Orifice.

Occupying a somewhat dubious position in the matter of its cause or origin is hypertrophic stenosis of the pyloric aperture. Although a condition most frequently met with in early life, it is not entirely confined to this period, as cases are occasionally encountered in the adult; and I have myself met with two unmistakable illustrations. Maier[4] fully established its existence in later life in some of the cases he describes. Others, too, in this country, among whom may be specially mentioned Clinton Dent and E. Cautley,[7] have likewise confirmed the existence of this particular form of obstruction in the adult.

Pathological Obstruction.

1. *Chronic Ulceration.*

Of all the causes that give rise to obstruction none are so frequent as those which arise from chronic ulceration of the non-malignant type. The obstruction is partly due to cicatricial contraction, but more often it is the result of the inflammatory thickening associated with the active spread of the ulcer. So great sometimes is this hard, more or less oedematous mass, that it is mistaken for a malignant growth.

The variable phases of the pathological aspect of the subject all have their bearing on the multiple manifestations which the lesion may present. For, as will be pointed out, it is the capacity or incapacity of the stomach to overcome the obstruction with ease or with difficulty that leads to the many complexities in symptomatic manifestations which so frequently complicate the diagnosis of this particular class of cases.

2. *New Growths.*

The new growths which may cause obstruction are both malignant and innocent. The latter may be briefly dismissed with a few words. Occurring on the inner surface of the stomach close to the pylorus, they may block the aperture like a ball-valve. External pressure is another rare cause of obstruction, and may be due to a distended gall bladder or a mass of enlarged glands over the head of the pancreas. By far the commonest form of new growth is carcinoma. This may commence in the walls of the canal, or be the result of invasion from without.

Symptoms.

As regards the symptoms of pyloric obstruction, it will simplify matters very materially if we first consider what are likely to be the natural physiological and pathological sequences of any hindrance to the escape of the contents of the stomach into the duodenum. I do not intend to continue the discussion into a consideration of those advanced cases in which there is no difficulty in diagnosis —where, for instance, we have all the signs of a stomach that occupies a considerable portion of the abdomen, holds several pints of fluid, and retains so much of the food taken that the patient occasionally vomits a "basinful" or a "chamberpotful" of sour, incompletely digested, porridge-like material containing fragments of food taken several hours or days before. Fortunately we rarely see these advanced cases now. It is not, then, with the symptoms of this type of case that I propose to deal, but with those in which the stomach is still capable of overcoming the obstruction, though with variable degrees of success. For want of a better and more accurate term to apply to these cases they may be designated cases of partial pyloric obstruction. It is the variableness of the amount of obstruction that constitutes the difficulty so frequently encountered in diagnosis.

If we consider the possible physiological effects of obstruction at the gastric outlet—and by this it must be understood that not only the pylorus itself, but the parts of the canal both in front of and distal to it are included—it will be clear that the organ first to be affected will be the stomach itself. Whatever be the relative importance of the different functions of the stomach, it is certain that nothing can take the place of the motor function; and the contents of the stomach—however much they may be acted upon, whether sufficiently or not, by the gastric juice—must be propelled out of the viscus by the contraction of the muscle tunics. Thus, then, it may be reasonably assumed that the primary effect of obstruction will be to place increased work upon the muscle layers; and the amount of work which they are called upon to perform will be in direct proportion to the amount of obstruction that they have to overcome. It is more than likely that the increased pressure to which the contents of the stomach are subjected, in the greater effort of the organ to rid itself of its digested ingesta, may deleteriously affect the normal secretion of the gastric juice both quantitatively and qualitatively. But, however this may be (and possibly it is only a matter of moment in cases of considerable and prolonged obstruction), it is the effect upon the muscle tunics that determines the interesting symptomatic vagaries of the condition—the factor deserving of most attention.

Consider, for a moment, the parallel illustration of any voluntary muscle of the body which is called upon to undergo prolonged exertion. If the work to be done be of an intermittent type, the periods of rest and increased requirements lead to a compensatory development, which, up to a certain pitch, succeeds in accomplishing the ends required. If, however, there be no periods of rest interposed, weariness intervenes, and an entire failure of accomplishment ensues. Introduce another factor into the scheme—failure to supply the body with proper and sufficient nourishment—and muscle inertia will be rapidly experienced.

The stomach does for a time, and in direct proportion to the amount of obstruction it has to overcome, succeed in carrying out its normal functions. Its muscle tunics hypertrophy, and, in consequence, it is enabled to drive out its contents successfully; but, as time goes on, it becomes more and more susceptible to influences which may reach it either by way of the nervous system or the blood supply. Thus, causes of various kinds, which arise from nerve exhaustion or imperfect metabolism affecting the constitution as a whole, influence the struggling stomach in particular; muscle inertia then ensues, and instead of the viscus propelling its contents through the obstructed orifice, they remain, only in part it may be, pent up in the gastric cavity, awaiting the time when the muscle parietes shall have regained sufficient energy to effect total expulsion. The sequence of events, however, may not prove so simple as thus far they may appear. For when, for the reasons given, the stomach is unable to expel its contents, it may, though sheer weariness of effort, relax its endeavour and give way to passive dilatation. To what extent this may go, and how long it may last, will again depend on the nature and degree of obstruction, and the general physical state of the patient. Herein will be seen to enter the symptomatic vagaries of the disease; for there is no telling when the symptoms will subside, exactly why they should appear, and why they are of the nature manifested. And yet, taking these considerations collectively, they furnish the best clues to the nature of the complaint.

Let me now ask for a closer investigation into some of the symptoms which the above considerations naturally lead one to expect will at one time or another manifest themselves.

1. In the first place, there is usually nothing about the general appearance of the patients to suggest constitutional disease; in other words, the gastric symptoms appear to be solely dependent on the disturbances affecting the viscus itself; indeed, there is often an appearance

of health and robustness about them, and between their "attacks" they are quite well. In those cases where the patients are thin, it is not the thinness of constitutional disease, but simply an emaciation due to lack of sufficient nourishment.

2. The earlier history of the case will sometimes indicate that the initial symptoms suggested an active ulcerative attack; but often any such sudden onset is absent, and the symptoms begin and creep on quite insidiously. This is usually the course taken by that type of obstruction dependent on congenital narrowness of the pyloric orifice.

3. Exacerbation of the symptoms is engendered by anything that has an enfeebling effect upon the constitution. If from undue exertion, mentally or bodily, from worry or anxiety, the patient is reduced to a state below par, the same diminished sense of physical and physiological fitness is experienced by the stomach and renders it less capable of overcoming the obstruction.

4. It will nearly always be noted that while, at the outset, the attacks of dyspepsia are few and far between, they gradually increase in frequency; and as they become more frequent so they become more severe. This sequence of events is most suggestive, because it indicates two probabilities—one, an increasing narrowness of the pyloric aperture; the other, the increasing failure of the stomach to overcome the obstruction.

5. Physical examination is only of value as regards dilatation. And here it may be remarked that, as a symptom, no more importance should be attached to the absence than to the presence of dilatation; for while at one time the viscus may be able to overcome the obstruction, at another it may fail; but, notwithstanding its absence, the obstruction is there. Rather, therefore, should it be taken that its presence at one time and its absence at another is an indication of partial pyloric obstruction.

As a means to diagnosis the *x* rays and opaque meal aid us considerably; but, from all that has been said about the occasional power of the stomach to empty itself completely by overcoming the obstruction, it can be well understood how that sometimes an erroneous impression may be conveyed. If, however, the meal takes an unduly long time to pass out of the stomach, and the skiagram shows, in addition, some irregularity in the shape of the parts in the neighbourhood of the obstruction, the picture presented by the *x* rays will help to confirm the opinion which the symptoms have probably already suggested.

TREATMENT.

If surgery had done nothing more in the treatment of chronic gastric disorders than deal with this particular class of cases, it would have earned for itself a reputation beyond the power of words to express. I know of few patients whose existence may be more miserable, and who, when relief is afforded, become more happy.

The condition of partial pyloric obstruction can always be temporarily relieved by rest in its broadest sense and careful attention to diet; but, as the condition is dependent essentially on mechanical causes, it is only by mechanical measures that it can adequately be dealt with. With regard to operation, we have the choice of two primary procedures. One is to deal directly with the obstruction; the other, to leave the obstruction untouched and circumvent it by uniting the stomach to the bowel. As regards the first of these two procedures, much must depend upon the nature of the obstruction. If it be due to growth, removal if possible; if it be of an innocent nature and the part can be freely mobilized, gastro-duodenostomy by Finney's method would appear to be better than either the Heineke-Mikulicz operation of pyloroplasty or pylorodiosis.

As regards the second of the two procedures, short-circuiting by the "no-loop" operation of gastro-jejunostomy is the sole method employed. Of all the operations for obstruction none have been more frequently executed than this. In my own wards, for instance, the operation has been performed by myself and by my assistant colleagues, Mr. Grant Andrew and Mr. Farquhar Macrae—now surgeons to the institution—428 times up to the end of 1919. Perhaps the best testimony that can be borne to the permanent good effected by the operation is to be found in the fact that, to my knowledge, there lives at the present day a female patient, perfectly well and engaged in active work, whom I operated upon seventeen years ago; and another, a male, also quite well and driving a motor car, upon whom I operated nineteen years ago.

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A Lecture
ON
HEART AFFECTIONS IN RELATION TO THE LABOUR MARKET.

DELIVERED DURING THE POST-GRADUATE COURSE AT THE NATIONAL HOSPITAL FOR DISEASES OF THE HEART.

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DURING the war, and particularly in connexion with recruiting, doctors were continually having to estimate the all-round efficiency of a man as a fighting unit, quite apart from having to disqualify him for such obvious disabilities as flat-foot, hammer-toe, hernia, etc.

Into such an estimate the strength and general condition of the heart necessarily entered very largely, and indeed became one of the most important and difficult factors to appraise in deciding upon a man's category. Owing to the vast complexity of modern warfare, in which whole nations are, so to speak, in arms, there came to be numerous posts which could be filled by men who were very far from being A1 men.

In the fully organized army a constant process of sorting was always going on by which those with impaired efficiency were moved downwards into lower grades, while those whose efficiency had improved were moved upwards.

There is no reason why in civil life a similar effort, doubtless on a somewhat different system, should not be made for estimating the efficiency of a man in the labour market. The problem here is in one sense easier than in the army, in another sense more complex; for clearly a man might be A1 for his particular trade, but not A1 as an infantry soldier, on whom frequent calls for excessive exertion may be made at any hour of the day or night, so that many a man, though he might only be B1 or B2 from the army standpoint, might quite well be A1 in his own particular occupation, which did not call for such sudden and strenuous forms of exertion, though it could not in any sense be classed as "light work." To quote from American experience:

> Throughout the war it remained a strange paradox that the "irritable heart of soldiers," which is a functional neurosis, where the heart is known to be intrinsically normal, should give rise to such pronounced cardiac symptoms, whereas the cases of valvular heart disease were so completely free from symptoms; in the "soldier's heart" anything approaching a normal heart rate even during rest is very unusual. It was generally found that mild cases of valvular disease in the army examinations showed a cardiac response well within normal limits and were remarkably free from subjective sensations, thus offering a striking contrast to the "effort syndrome" in which such symptoms are usually pronounced.[1]

We want to consider this afternoon how far cardiac lesions, whether functional or organic, affect a man's chances of getting work in the labour market and to what extent they are actually prejudicial to him when he does get it.

The progress of modern medicine has stripped heart disease of many of its terrors simply by demonstrating that there are numerous organic affections of the heart which are compatible with a life of reasonable length and of a not too restricted activity. Still, for all that, one must realize that an organic disease of the heart is a handicap in the labour market, more especially as heart disease still connotes to the employer the idea of early and sudden death, as doubtless it did to the profession in the dim and distant past, for the ideas held by doctors in one generation become the *idées fixes* of the laity in the next.

Now it is, of course, quite obvious that patients suffering from a gross structural disease of the heart, such as mitral stenosis or aortic regurgitation, cannot safely be employed on really heavy work, though almost any doctor with much experience could produce an instance of someone who had done astonishingly heavy work in spite of one or other of these lesions. Patients with aortic disease are more likely to be unconscious of their cardiac ailment than are the subjects of mitral disease, in whom shortness of breath manifests itself sooner than in cases of aortic disease. But we must not be guided by exceptional cases, which make bad rules for medicine just as legal people say that "hard cases make bad law." On the other hand, to write down every cardiac case as fit for "light work only" is equally ill advised, at least if by light work we mean something mainly sedentary. The fact is that fairly hard work can be done by many people who suffer from heart disease, provided the hours are regular and the work more or less the same from day to day and hour to hour, while there is no undue sense of hurry in the doing of it. Anything in the nature of spurts, which may be almost an essential element in some occupations, though the work itself may not be so intrinsically heavy, should be strenuously avoided; thus, dockers are a good instance of an occupation which involves periodical rushes, with, it may be, unduly slack intervals, and that kind of thing is bad for almost any form of heart disease, and particularly for the older and casual workers.

A heart which has been badly damaged in early childhood must always be a source of anxiety, and in such cases we can seldom look forward to anything but quite sedentary work under the most favourable circumstances; the important thing is to decide early as to what sort of sedentary work the boy or girl should be trained for, carefully considering their individual proclivities. The heart, however, which is damaged by rheumatic fever after puberty in early adult life, if wisely handled at the outset, is often capable of a surprising amount of work, and it is these cases, especially of aortic disease, which are often able to carry on fairly hard work for a quite considerable length of time. In the case of mitral stenosis, on the other hand, decidedly less work can be expected from the heart, and it is well to remember the dictum of Huchard that in mitral stenosis we have a heart "*réglé pour un petit travail.*"

But it is quite a different matter when we come to the case of men who seem to develop heart disease in or about middle life as a result of strain or lues. Such cases are nearly always progressive, and their value in the labour market is much inferior to that of those whom we have just been considering, where the lesion is due to rheumatism.

In particular it is true that cases with a history of lues can seldom be relied upon for any seriously continuous hard work, and the special liability to sudden death in these cases should never be forgotten. Doubtless it is this kind of case which has frightened employers, and as, of course, so often when sudden death occurs, the verdict brought in is that of "heart disease," all forms of heart disease become tarred with the same brush and all seem equally likely in the eyes of the employer to give rise to sudden death, so that they not unnaturally look askance at all cases suffering from heart disease, no matter what the cause may be.

Putting aside the grosser structural lesions of the heart there are all kinds of minor cardiac affections which, for want of a better term, might be grouped under the heading of "weak heart." These cases may, in many instances, be the result of some infective process, such as influenza, malaria, or indeed any febrile condition, and are not unreasonably described as "poisoned hearts," but in addition to this there would seem to be some people who are born apparently with subnormal cardiac power; fortunately there is not, as a rule, so much difficulty about these cases as regards occupation, for they, at the outset of their career, have insensibly drifted into quasi-sedentary occupations more or less suited to them, having instinctively recognized an inaptitude for much physical exertion, and it was cases such as these which, at the beginning of the war—perhaps not unnaturally—were passed into the army as A1, and tended to swell later on the mighty host of D.A.H. patients to such formidable proportions. Many cases of this kind in which the nervous system plays a part are undoubtedly benefited by occupation, and also by exercise within reasonable limits. There are, of course, symptoms apparently associated with the heart which do not necessarily arise from it, though it may be difficult to disabuse a patient of the belief that a pain in the left side and perhaps some shortness of breath is a sure sign of heart disease.

In civil life the doctor, except when definitely employed by the State, an insurance company, or some similar body, has primarily to consider the interest of the individual, but in reality the wider interests of the State and the individual are not so much opposed as might at first sight appear. Clearly it is not to the interest of the State or an employer to let themselves discard an efficient workman because he happens to have some disease of the heart—all the employers and the State require is to be protected against exceptional risks; on the other hand, the individual is benefited by finding a suitable employment. "There are positions in industry; in fact, in every plant of reasonable size, that people of varying substandard conditions of health and body can fill with efficiency to the profit of their employers and themselves."[2]

The main thing to grasp, from the point of view of the labour market, is the importance of prognosis; with regard to this the ordinary stethoscope diagnosis does not help us much—we merely learn that there is or is not some structural disease of the heart; whereas what we want to know is the man's efficiency, and how far this structural disease should affect his chances of employment. No doubt a great study of the prognosis for heart cases has been made through insurance companies and much useful information has been acquired as to the expectation of life. But here it is purely a question of "How long the proposer is likely to live." We want to consider the more profound question: "In what way can he live with greatest benefit to himself and the community?" In what work can he most effectively engage or continue? Are there some trades which are more suitable for cases with heart disease than others? It would, of course, be easy to reply that cases with heart disease are best suited by clerical and sedentary work, and no doubt this covers a fair amount of the ground. But among the vast masses of the manual labourers there are many whose whole temperamental and psychic make-up, so to speak, is entirely unsuited for sedentary work. Then, again, a man may be working well but gets an attack of rheumatism which damages his heart: Is he to give up his work? If really exceptionally heavy, he clearly must do so, but when a man has been at some occupation for several years, much of it which to a tyro would be heavy and difficult has to him by long practice become comparatively easy. The whole aim of industrial or occupational medicine is to find the square hole for the square man, and as this is particularly difficult to do with regard to heart disease we want to consider rather closely the various trades which would be most suitable for any particular cardiac lesion. Obviously the first thing to be considered is the man's own natural aptitude and inclination for any particular occupation. As a general rule it might be said that all work which puts a good deal of strain on the lower extremities is less unfavourable to cardiac cases than that in which the strain falls mainly on the upper extremities. Most forms of aortic disease and undoubtedly those of the degenerative type, appear to be very unfavourably affected by any work which involves even a moderate strain upon the arms, such as carpentering; and this is particularly the case when there is any suspicion of angina. Thus I had recently under my care at the hospital a young man with an aortic lesion. He worked in a "card-glazing" factory and was given the easiest work to do which they had; it consisted in pulling with the left hand quite a light lever, which set in motion the roller beneath which the cards were passed, but this continued pulling with the left hand, though the resistance was quite moderate, proved too much for him. Then, again, I recently saw a man who had been invalided out of the army with aortic disease, whose occupation was "pile driving"; now this is not heavy work, as it is done by a machine and only requires superintending; however, such work may involve going up a ladder to the height of 40 ft., and when he had to do this he would become giddy and be in danger of falling, so that this kind of work had to be abandoned.

To take a few trades which are usually classed as light work, and which are in most cases suitable for those who have compensated valvular lesions:

1. *Tailoring.*—As a rule, we are apt to associate this occupation with bad ventilation, but of course there is no reason why the ventilation should be bad, and during the past few years all factories have been greatly improved in this respect; still, owing to the very sedentary nature of the work, men easily feel the cold and want windows shut, so, to that extent, the ventilation is not such an easy problem. The work itself is in general light enough, the only heavy part being the ironing; the iron generally used weighs from 14 to 20 lb., and may sometimes weigh even as much as 30 lb. No doubt there is a great deal of knack in the use of these irons, so that the weight may not seem much to a man accustomed to the trade.

2. *Boot repairing* is another occupation which is not unreasonably classed as "light work," but here again the ordinary boot repairing known as "botching," as opposed to finer boot repairing, involves standing upright at the bench for long hours at a stretch, which of course puts a strain upon the circulation, and I have on several occasions met with men having compensated aortic lesions who had to give up this work owing to the long hours of standing required, though they might have done intrinsically harder work which did not happen to involve so much standing.

3. *Boot-making* is also classed as a "light occupation," and so it is; but it will be found unsuitable for most forms of heart disease, as it involves much use of the arms both in the hammering and wide stitching which nearly always puts a strain upon the heart; the posture of boot-makers is also bad for all kinds of chest complaints.

4. *Basket-making.*—This might seem eminently suitable for those suffering with minor affections of the heart, but this will not always be the case, for there is a great variety in basket-making, which differs much in different localities, and the making of a large basket involves a wide extension of the arms, and so puts an undue strain upon the heart.

5. *Leather Work.*—Many kinds of light leather work are well adapted for most forms of heart disease, where the patient can get about easily, but for such occupations a man should be fairly handy and intelligent. Often a trade which seems quite light, and indeed is so in a general way, may incidentally involve quite heavy work. Thus, for instance, portmanteau sewing would seem quite suitable for many cardiac cases, but unfortunately it frequently involves having to lift heavy weights, so that one has been obliged to knock off a man from such work, though superficially it might seem entirely suitable.

6. *Scavenging.*—Then, again, one has met with scavengers for a borough council who could quite well do ordinary sweeping, but the extra exertion involved by "squeegeeing" when it has been specially wet unfits them for the job and they have it give it up.

Motor Driving.—The occupation of chauffeur is suitable for many varieties of cardiac lesion, provided there is an automatic starter, otherwise the cranking of the car may be a severe strain; and quite recently I had under my care at the hospital a man whose cardiac symptoms first dated from an occasion when he was cranking his car and he felt the strain to be excessive; in his case the lesion was myocarditis of luetic origin, and for such a man the occupation of chauffeur is quite unsuitable, as there is always in a case of this kind danger of sudden death.

As a general rule, dusty occupations, at least for mitral cases, should be avoided, as they induce coughs and catarrhs, so favouring bronchial congestion, to which patients with a mitral lesion are particularly disposed. Similarly, in advising upon any occupation it is important to consider whether it will expose the patient specially to vicissitudes of weather and sudden changes of temperature.

On careful inquiry it will often be discovered, particularly in towns, that it is not so much the work which is trying the patient as the fact that he lives at the top of some model dwellings, so that at the end of a long day's work he has to ascend an interminable flight of stairs; then, again, the main trouble may be the long journey to work, the catching of omnibus or train, and not the work itself.

With a certain amount of care and trouble in the adjustment of occupation much more work can be got out of quasi-derelict hearts, to the great advantage of the community and the not less benefit of the individual patient.

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CIVIL LESSONS OF THE WAR FOR THE TREATMENT OF FRACTURES OF THE SKULL.*

BY

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AT first sight it would not seem that gunshot wounds of the head could teach us any lessons of use in dealing with the ordinary fractures of the vault in civil life. Certain points in the treatment of fractures of the vault—none of them really new—have, however, been firmly established by experience in the war. On such of these as appear to be of use in civil practice I wish to touch.

The advantages of total excision of scalp wounds before dealing with underlying fractures were so firmly established during the war that this procedure is likely to become a routine instead of an occasional step in operations upon civil compound fractures.

Early in the war Sargent introduced perforated metal tubes for dealing with the appallingly septic results of leaving head wounds to be operated on at the base. These tubes will, I think, find a really useful place in the drainage of cerebral abscesses; for it is often difficult to keep a rubber tube in position in the brain. To overcome this difficulty I successfully used a tracheotomy tube to drain a cerebellar abscess in a boy in the East London Children's Hospital. Now I should under similar circumstances use a Sargent's tube.

But I think that the most important point which has been fully established in connexion with the treatment of fractures of the vault is the efficient treatment of wounds of the great blood sinuses. Wounds of the superior longitudinal sinus are not, I fancy, very common in civil practice, but any depressed fracture in or near the middle line of the vertex may be complicated by such a wound.

In the summer of 1910 I operated on a depressed fracture in the mid-line of the vertex. The fracture, which was caused by a falling brick, had caught the upper ends of both Rolandic areas, and both legs were paralysed below the knees. On raising the depressed fragment I encountered that copious stream of haemorrhage which a large rent in the sinus produces. I controlled the bleeding by packing gauze between the sinus wall and the skull, and then sutured the rent. The case recovered and I was very pleased with myself, and decided that I knew how to deal with wounds of the superior longitudinal sinus. There my knowledge of wounds of the sinus remained until the Somme fighting. Then, having lost one case of torn sinus which I had sutured, I contented myself with packing the next one with gauze and leaving in the packing—as a matter of fact, this case recovered. But it was the last I packed, because another surgeon asked: "Why didn't you 'postage stamp' it?"

Haemostasis.

I had been familiar with Horsley's use of muscle grafts for arresting haemorrhage from cerebral vessels, but I did not know that it had been applied to torn sinuses, though this had, I understand, been done for some years before the war by Cushing, who, I believe, always uses a muscle graft cut from the calf for his "postage stamp." Short of assistance, as one often was in the war, I (and I fancy many other surgeons) tried cutting grafts from the aponeurosis of the scalp flaps. The graft should be cut about the size of a postage stamp, and as soon as cut placed over the rent and pressed over it by a gloved finger. This is better than gauze, as the graft is apt to stick to the gauze and come away with it. In twenty to thirty seconds the graft is usually securely stuck and all the haemorrhage

*Read before the South-Western Branch of the British Medical Association, Torquay, April 7th, 1920.

has ceased. These fascial grafts are quite as good as muscle for wounds of the cranial surface of the sinus, which are the only ones likely to be met with in civil practice, and they have the advantage of being cut quickly and without leaving the field of operation. That these grafts stick extremely firmly I know from the examination of two fatal cases at *post mortem*.

If, however, the rent runs round the corner on to a cerebral surface of the sinus it is difficult to get fascial grafts to stick, and they usually require a reinforcing stitch which is not always easy to apply. In such cases a "plug" of muscle is the most satisfactory method of arresting haemorrhage, for the muscle graft with its power of causing rapid clotting holds more quickly. Where the sinus has been torn almost across, it is best to divide it completely and ligature it. This I have had to do twice (both times in the frontal region). One case I was able to watch for four weeks, and he showed no ill effects. The other was operated on in the Somme fighting, and was only watched for a few days before evacuation. He was apparently well then.

I think that all surgeons who did much head work in the war have abandoned plugging for wounds of the superior longitudinal sinus as uncertain and dangerous, owing to the risk of introducing sepsis later and because it entails too much haemorrhage before haemostasis is established. Moreover, bleeding is apt to start again when the gauze is removed. Another point which we learnt was to beware of all depressed fractures near the mid-line of the vertex, and to nibble away sufficient bone around the depression fully to expose the sinus before displacing any fragments likely to have penetrated it. It is no easy matter to stop bleeding from a sinus if the rent is not fully exposed. If bleeding has started before the sinus is fully exposed it is best to place a finger of the left hand on the bleeding point and nibble away bone until the dura is exposed all round that haemostatic finger before attempting to apply a graft.

In order to get at a rough idea of the frequency of this complication I have been through such statistics as I possess. They are the total number of gunshot wounds with fractures of the vault (whether the dura was penetrated or not) operated on in No. 12 Casualty Clearing Station between November, 1916, and November, 1917, and 47 cases operated on by myself in the Somme fighting. There were 614 gunshot wound fractures of the vault, with thirty wounds of the superior longitudinal sinus, or rather less than 5 per cent. superior longitudinal sinus injuries. Of these 30 cases 18 recovered and 12 died. Included in these figures are 11 cases personally operated on (7 recoveries and 4 deaths) out of 215 gunshot wound fractures of vault, or rather over 5 per cent. Probably the incidence of this complication in civil fractures is less than 5 per cent.; 2 per cent. to 3 per cent. would probably be nearer the truth. If this be so, I think that, apart from the opportunities given by the war, few surgeons can have had sufficient experience of wounds of the superior longitudinal sinus to become at home with them. That is why I have ventured to give the results of my experience in this field. I am convinced that any one who is prepared to tackle a depressed fracture should be familiar with the "postage-stamp" method of dealing with this emergency, for it is a complication which may easily cost the patient his life if the surgeon is not prompt and sure in his method of haemostasis. Armed with the knowledge of the "postage-stamp" method, the arrest of haemorrhage from a sinus is hardly ever a matter for anxiety.

Lumbar Puncture.

Lumbar puncture was amongst the procedures which aroused considerable interest during the war. As a means of diagnosis in gunshot wounds it is seldom if ever needed. Post-operative lumbar puncture was very useful for reducing cerebral hernia. It acts slowly, producing its maximum effect in about twenty-four hours. One drachm to three drachms was withdrawn according to the pressure, and the puncture was not done oftener than every forty-eight hours. Occasionally there was a marked recession in place of the hernia after one puncture, and for this reason puncture should not be employed until the hernia is at any rate moderately clean. Our treatment crystallized out to antiseptic lotions (usually Dakin's) till sepsis was well in hand; then lumbar puncture every second or third day till the hernia was reduced, and then a plastic operation to cover the raw surface. Covering the raw surface with Thiersch grafts is not satisfactory, as it leaves a very poor scar.

Headache with a tense wound is relieved by lumbar puncture. But headache with a lowered pressure is made worse by lumbar puncture. Also if too much fluid is removed headache is caused by lumbar puncture. We had no success in treatment of meningitis by lumbar puncture where streptococci had been demonstrated in cerebro-spinal fluid.

Fits soon after operation occurred in about 5 to 10 per cent. of cases where the dura had been perforated. They were usually associated with high cerebro-spinal pressure and a bulging wound. When this was the case lumbar puncture usually relieved. These fits unless frequently recurring were (contrary to expectation) not of serious prognostic importance.

Anaesthetic.

The war proved without doubt that local anaesthesia can be satisfactorily used in even the most severe cases of fractured vault. It is very satisfactory in patients who are fully conscious. In those quite unconscious no anaesthetic is needed. The cases which show the restlessness of cerebral irritation need a general anaesthetic. Some surgeons used omnopon or morphine for this purpose and still considered that they were operating under local anaesthesia. I preferred to use open ether for such cases. Local anaesthesia (especially novocain and adrenalin) is very satisfactory, and might be used for most of such cases in civil practice. The adrenalin greatly diminishes the bleeding from the scalp flaps, and so saves a good deal of time and irritation.

Conclusions.

I would suggest that experience during the war has established:

1. The advantages of excision of scalp wounds.
2. The value of metal tubes for draining cerebral abscesses.
3. The ease with which sinus haemorrhage can be stopped by a "postage-stamp" graft.
4. That lumbar puncture is useful in certain complications of fractures of the skull.
5. The value of local anaesthetics in cranial surgery.

THE ETIOLOGY OF DIVERTICULITIS.

BY

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THE very full description of diverticulitis given by Dr. Maxwell Telling in the *British Journal of Surgery* of January, 1917, called my attention at the time to what appeared to be a newly discovered disease, and the interesting discussion on the subject at a meeting of a subsection of the Royal Society of Medicine, and reported in the BRITISH MEDICAL JOURNAL of January 17th and 24th of this year, revived speculations as to the causes of this condition. The theories advanced on those occasions were largely based upon appearances found after death. I venture to think, however, that when we are able to collect the previous histories of a sufficient number of cases it will be found that the true causes will be more truly deduced from the living. Although the three cases which I have been able to observe ended in recovery, their clinical history and symptoms nevertheless have suggested some speculations upon the etiology of the disease. I think, in order to realize fully the causes and early stages, we have to consider the whole of the medical history before the appearance of the local lesions encountered at operation or in the *post-mortem* room; and in this history certain types of build and temperament appear to be strong predisposing elements.

In opening the discussion Dr. Telling assumed that the diverticulum is made first, congenitally or otherwise, and that, as is the case of the appendix, all inflammations are brought about by morbid septic activity developing in their

contents, and are secondary. But is it necessary to make this assumption? May there not be a primary infection of mucous follicles such as occurs in the skin in the case of an ordinary boil, or for that matter in an ischio-rectal abscess? In one of my cases ischio-rectal abscess did occur two years before diverticulitis. If such an event had occurred a little higher up the bowel and within the peritoneal cavity, should we not have had diverticulitis? In another of my cases diverticulitis occurred ten years after a severe Whitehead's operation for piles, but whether there was any association between the two I could not say.

The earliest theories regarding the sac formation seem to me to be rather too mechanical. For instance, the belief in gas pressure and constipation was started and is still handed on, although this point is not insisted upon by surgeons in regard to appendicitis; my three cases were associated with looseness of the bowels. The diagnosis in two of them was confirmed by operation by two distinguished surgeons. One of these was found to be suffering from an acute kink resulting from adhesions of the sigmoid to the parietal peritoneum, and the other from a fistulous communication between the sigmoid and bladder.

We are still somewhat uncertain as to the constitutional and local causes at work before the condition declares itself, and I feel sure it would be illuminating to note in all cases the particular type and build and temperament of the patients, as well as any temporary condition of mental worry or powerful emotional disturbance. I have no doubt of the very close connexion between depressing emotion and pathological conditions of the large intestine. We find this to be a constant contributor to the common colitis of this country, and I would suggest that this is the first stage in the creation of diverticulitis; a sensitive and impassioned temperament being the most powerful predisposing factor. In men of this build the effect of acute emotional worry tells at once in some way on the large intestine. The colitis of worry evidently results from diminished trophic innervation and tissue resistance, whilst at the same time the natural digestive ferments are faulty in quantity and quality. Food and the mucous lining become morbidly septic. The *B. coli* becomes more and more virulently active. Probably many follicles are infected, which may account for diverticuli being multiple.

So far, I believe, no one has suggested a comparison with ischio-rectal abscess. May not these abscesses and diverticulitis in their respective origins have much in common? After the fifty-seventh year of life the sigmoid would appear to be the more vulnerable locality of the two. Possibly many infected follicles of the mucous membrane undergo spontaneous cure by discharge into the bowel, whilst owing to distension and destruction of their lining the sacs thus produced may become what we have hitherto thought to be permanent or congenital diverticuli.

In my cases pain in the left lower quadrant of the abdomen led to some amount of tumour formation (fibrous hyperplasia), very apparent in the case with parietal adhesions and kinking, not so much so in the case in which the sigmoid adhered to the bladder and perforated into it. The latter case exhibited, in addition to the daily passage of flatus by the urethra, all the phenomena of intense *B. coli* toxaemia, showing in succession well marked rigors, fever, violent headaches lasting from two to four days, tinnitus and toxaemic vomiting; evidently the result of leakage of toxins and bacteria into the peritoneum. Two years before these events I saw this man suffering from an acute attack of colitis with diarrhoea, severe colic, and tenesmus.

DURING the year 1918 there were 19,018 cases of diphtheria in Australia, with 607 deaths, out of a population of about five millions.

A CONFERENCE of the "Nordiske Forening mod Tuberkulose" will be held on June 28th, 29th, and 30th, in Stockholm. The subjects to be discussed are (1) tuberculosis legislation in the Scandinavian countries; (2) work therapy in sanatoriums and the organization of colonies and settlements; (3) the special measures required in tuberculosis of the larynx; and (4) the surgical treatment of pulmonary tuberculosis, including treatment by artificial pneumothorax. Representatives from Finland and Iceland, as well as from the three Scandinavian countries, are expected to attend.

ETIOLOGICAL FACTORS IN ABORTION:

*A STUDY OF 100 CASES.**

BY

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INTRODUCTORY.

THE material on which this paper is based has been obtained from a clinical and pathological examination of a hundred unselected cases of abortion admitted to the maternity department of the St. Mary's Hospitals, Manchester. This is too small a number on which to base authoritative statistics, but the conclusions arrived at indicate the lines along which a more extensive investigation should be carried out.

A majority of the cases belonged to the class of incomplete abortion, and in these the whole ovum was not available for pathological examination.

Our thanks are due to Professor H. R. Dean of the pathological department, University of Manchester, who kindly arranged to carry out the work in connexion with the Wassermann reactions, and to members of the honorary medical staff of the St. Mary's Hospitals, Manchester, for allowing us to examine cases of abortion admitted under their care.

The following table shows the period of gestation at which abortion occurred:

TABLE I.—*Period of Gestation at which Abortion Occurred.*

	Per Cent.
4 weeks	0
6 (inc.) to 8 weeks	3
8 (inc.) to 12 ,, ...	12
12 (inc.) to 16 ,, ...	40
16 (inc.) to 20 ,, ...	15
20 (inc.) to 24 ,, ...	12
Doubtful	18

The 18 cases in which the period of gestation was doubtful were all early abortions. The great majority therefore occurred during the first half of pregnancy and 40 per cent. between the third and fourth months.

Table II gives the number of previous full term labours and abortions.

TABLE II.—*Previous Full Term Labours and Abortions.*

	Full Term.					Premature.						
Pregnancies ...	0	1	2	3	4 and over	0	1	2	3	4	5	9
No. of cases ...	20	15	17	11	37	60	24	8	1	5	1	1

In 17 per cent. of the cases there was no previous pregnancy; 80 per cent. had previously had full-term children, 37 per cent. more than three; 40 per cent. gave a history of previous abortions, but in more than half of these abortion had only occurred once.

THE CAUSES OF ABORTION.

(*a*) *Clinical Investigation.*

To the question what produced the abortion, the patients replied as follows:

	Cases.
Strain	7
Falls	6
Kicked abdomen	1
Shock	2
Injury to foot	1
Instruments	1
Syringing	1
Lead pills	8
Sexual excess	1
Unknown	72

Excluding the above cases, the following abnormal

* From a paper read before the North of England Obstetrical and Gynaecological Society, March 19th, 1920.

conditions were found either during the clinical examination or at the time the uterine contents were evacuated.

	Cases.
Mitral stenosis	1
Chronic bronchitis	1
Phthisis	1
Severe anaemia	1
Influenza	3
Fibroids	2
Fibroids and placenta praevia	1
Placenta praevia	2
Foreign body in vagina	1
Retroversion or flexion uteri	5
Hydatid mole	1
Previous abdominal operations	3
Total	22

Twelve patients gave a positive Wassermann reaction. In six of these no other cause could be found to account for the abortion. A possible cause could therefore be ascertained clinically in 56 per cent. of the cases.

(b) Pathological Investigation.

In 54 specimens gross pathological changes were found as follows:

	Specimens.
Fetal circulation obstructed	2
Hydatid mole	1
Extensive placental infarction with associated arterial degeneration	6
Placenta oedematous	1
Haemorrhage into placenta (including three cases with red infarction, and three associated with accidental haemorrhage or placenta praevia)	9
Haemorrhage on fetal surface of placenta under amnion	2
Haemorrhage into decidua (including two cases of fibroid polyp, one placenta praevia, and eight blood moles)	33
Total	54

In the remaining 46 specimens various conditions were met with, but were either too limited in extent to be of decisive importance or the specimens examined were too incomplete for satisfactory results to be obtained.

ANALYSIS OF THE CASES GIVING A POSITIVE WASSERMANN REACTION.

In twelve patients the Wassermann reaction was positive.

(a) Clinical Observations.

Signs of active syphilis were present in one case—a patient with specific ulcers on her legs. One patient only was aware that she had syphilis. This was a single girl whose blood had been previously examined and shown a positive Wassermann reaction.

Of the twelve patients eleven had previous full-term children, and all were born alive except in one case, where three were stillborn. One patient had nine and one seven full-term living children. Six patients had had previous abortions but in only one case more than one.

Repeated abortions therefore are not necessarily associated with a positive Wassermann reaction. In fact, of seven patients in the complete series with four or more previous abortions not one gave a positive Wassermann reaction.

TABLE III.—*Details of Previous Full Term Labours and Abortions in Cases in which the Wassermann Reaction was Positive.*

	Full Term.				Premature.				
Pregnancies	1	2	3	4 and over	0	1	2	3	4
No. of cases	1	2	3	5	5	6	1	0	0

A patient with a positive Wassermann reaction need not necessarily abort but may go to full term. It is therefore fallacious to suppose that when abortion does occur it must be caused by the syphilitic virus. Such a woman is just as much exposed to the influence of other factors which produce abortion as one in whom the reaction is negative.

Obviously, however, secondary syphilis may lead to separation of the ovum in the same way as any other acute infection, and tertiary lesions, if affecting the fetus, placenta, or decidua, may have a similar result, or, at any rate, act as predisposing causes.

In the twelve cases under consideration the following alternative factors were present:

	Cases.
Falls and strains	2
Previous Caesarean section and adhesions between uterus and abdominal wall	1
Fibroid polyp in uterine cavity	1
Marked retroflexion of uterus	1
Previous operation for ectopic gestation	1
Obstruction of vessels in umbilical cord	1

The two cases attributed to accident may be objected to on the ground that the only evidence is the patient's own statement. Both were married women with families and appeared to be telling the truth. In one case abortion took place a week after a fall downstairs, in the other after lifting a heavy tin box.

An adherent uterus after Caesarean section and a fibroid polyp in the uterine cavity are just as likely to be the cause of abortion as syphilis.

The case with marked retroflexion of the uterus had no symptoms of incarceration, but the congestion caused by the faulty position might easily account for the engorged decidua and haemorrhage into the placenta observed on subsequent examination.

Ectopic pregnancy is very frequently associated with lesions due to pelvic infection, and these may lead to abortion. If post-operative adhesions are also present abortion is more likely to occur.

Obstruction of the vessels in the umbilical cord undoubtedly led to fetal death in the case referred to, but this appeared to be due to an amniotic adhesion which in turn may have been produced by syphilitic disease. No obvious syphilitic lesions were to be found in the fetus or placenta, however.

(b) Pathological Observations.

No specimen presented the typical naked-eye appearances of syphilis. No osteo-chondritis of the long bones or miliary gummata of the liver were observed in the four cases in which the fetus was available for examination, nor could spirochaetes be found in the liver in these cases. The placentas showed no gross abnormalities other than infarction and blood infiltration. The microscopic appearances varied considerably, but no conditions were found which were not present in other cases in which the Wassermann reaction was negative. A careful search was made for spirochaetes but without success.

To sum up, 12 per cent. of cases gave a positive Wassermann reaction. In more than half of these other abnormal conditions were present which by themselves might produce abortion. In two cases (adherent Caesarean section scar and fibroid polyp) we feel justified in saying that syphilis was not the cause of the abortion. In two others (retroflexion of uterus and obstruction of vessels in umbilical cord) we think it extremely unlikely that syphilis was the deciding factor.

We therefore estimate at 10 per cent., and probably less, the cases in which syphilis leads to abortion.

CONCLUSIONS.

(*a*) The commonest period for abortion to occur is between the third and fourth months.

(*b*) Abortion is comparatively uncommon in primiparae, less than one-fifth belonging to this category. Most women who abort have borne previous full-term children, and in a majority of cases more than one. Frequent abortions in the same patient are uncommon, and when they do occur are not necessarily due to syphilis.

(*c*) As regards etiology, accidental or reflex causes are present in 18 per cent. of cases.

General disease of the mother, disease or displacement of her genital organs, and gross abnormalities of the fetus or placenta (other than those due to haemorrhage or infarction) are found in 25 per cent.

Syphilis, as represented by a positive Wassermann reaction, accounts for 12 per cent., but its influence as the actual cause of the abortion is probably much less, and nearer 8 per cent.

From the remaining 52 per cent. has to be deducted the figure for the self-induced group, which is probably not less than 20 per cent. In the present series 8 per cent.

admitted taking lead pills, and a number of these showed clinical evidence of lead poisoning. This leaves over 30 per cent. of cases with no cause assigned. Pathological investigation throws little additional light on the subject, as most of the morbid changes found do not produce the abortion, but occur during the operation of some other cause.

It would appear, however, that the mother is primarily at fault as the result of some diseased condition, whether it be of an organic nature, or merely an increased irritability of the centres presiding over the expulsive action of the uterus.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE MYOCLONIC TYPE OF EPIDEMIC ENCEPHALITIS.

AFTER reading with great interest Dr. Piero Boveri's article in the JOURNAL of April 24th, p. 570, I record the following case, which occurred recently in my own practice:

On February 9th I was called to see a man, aged 62, who had been suddenly stricken with severe spasmodic pains in the limbs, chest, and face. For two days the pains persisted, but had then gradually diminished in severity, giving place to sudden painful contractions of the extensors of the legs, the abdominal muscles, sternomastoids, pectorals, intercostals, and diaphragm (as evidenced by hiccough). Twitching occurred about every two seconds. The patient sweated profusely, and was slightly cyanosed. There was considerable muscular weakness and some ataxia. The superficial reflexes were in abeyance, Kernig's sign was absent, but the head was a little retracted. The deep reflexes were slightly exaggerated, but no ankle clonus was present, and the plantar response was flexor. There was no apparent disorder of sensation. The discs were slightly injected, but there was no optic neuritis. The only cranial nerve involved was the seventh, there being occasional twitches of the alae nasi and occipito-frontalis. At this stage, although there was no actual lethargy, there was a curious prolongation of the reaction time to aural stimuli—this I have observed, however, previously in patients on chloral and bromide, as was this patient—but it roused suspicion. The blood pressure was 170 mm.

In a day or two these symptoms abated *pari passu* with the advent of lethargy, passing into stupor; tremors of the right hand (only) now appeared, and the patient assumed the mask facies of paralysis agitans.

The cerebro-spinal fluid, which was quite clear and under slight pressure, was examined by Dr. Arthur Sladden, pathologist to Swansea Hospital, who reported a cell count of 5 to 6 per c.mm., a trace of albumin, and negative cultural results; the Wassermann reaction in the blood and cerebro-spinal fluid was negative.

The patient, after beginning to improve, died quite suddenly of what was evidently either (gross) cerebral haemorrhage or thrombosis. A *post-mortem* examination, even partial, was discountenanced by the relatives.

The temperature varied between 100° and 99°, and the pulse rate gradually increased from 80 to 120 and diminished again to 80. There was no history of influenza, but there was some coryza with a thin watery discharge throughout. Profuse sweating was a marked feature of the whole course of the disease. This case is of interest, firstly, in that it showed the chief seat of the morbid process to be in the thalamic region, with probable involvement of the red nucleus, and secondly, in that it bridges the gulf between the more usual clinical type of the disease and that type described by Dr. Boveri, exhibiting the lethargy of the former as a late manifestation and the myoclonic spasms of the latter. Of further interest, too, may be an undoubted case seen by me eight months ago, in which the disease was ushered in by right hemiplegia with aphasia; after running a typical course for three weeks it ended in such a measure of recovery that all that can now be said of the patient is that he is not quite so methodical an accountant as he formerly was.

In both these cases there was a history of considerable and prolonged mental strain.

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HAEMATOPORPHYRINURIA.

DR. WYATT-SMITH, in his article on the treatment of delirium tremens (BRITISH MEDICAL JOURNAL, December 6th, 1919, p. 743), says that he has never met any one who has seen a case of haematoporphyrinuria from the use of sulphonal. He and others may be interested in the following extract from my note-book:

Miss A. B., aged 35, came under my care on October 22nd, 1901, suffering from a complication of ailments. Some six months before she had such constant vomiting, accompanied at one time by severe haematemesis, that the diagnosis of gastric ulcer was made, and at one time it was feared that there might be malignant trouble. There had been great loss of flesh and she suffered severely from neuralgia and insomnia, for which morphine, phenacetin, and sulphonal had been freely prescribed.

When first I saw her she had been carefully fed and had regained much of the weight she had lost, but the muscles were flabby and she was intensely weak. She had a heavy, drowsy appearance, with eyelids which seemed loth to lift; her speech was dragging; there were no superficial or deep reflexes. Sensation was normal. She complained of pain in the right renal region, where there was an enlarged tender movable kidney, and of intense pains in the legs. Constipation was very obstinate. The urine was of a dark brown-purple colour, almost like port wine, and gave in the spectrum the bands characteristic of haematoporphyrin. It contained no albumin, corpuscles, casts, or sugar. The specific gravity was 1020. The temperature was normal. I found that she was taking 30 gr. of sulphonal every night, and had done so without intermission since January, 1898, her English medical advisers having told her that it was safe to do so. For the four previous years she had taken sulphonal and phenacetin freely. She had also been in the habit of drinking a large amount of alcohol, though the exact amount I found it impossible to elicit.

I immediately stopped the sulphonal, giving bromides instead, and administering a tonic with strychnine. After this she slept well, and took her food satisfactorily, and seemed much better, though the urine still retained its abnormal colour.

After about ten days marked paresis of the lower limbs appeared, and soon increased to complete paralysis. The upper limbs followed suit. Later she had incontinence of urine and faeces, and still later all power of phonation was lost. There was no loss of sensation. Her mind became more and more clouded, and she died on November 6th, 1901. She took her food well to the last.

At the *post-mortem* examination all the tissues and organs were found very deeply stained with the same brown-purple colour. The kidneys were congested and the capsules slightly adherent. The liver was congested and enlarged. The spleen was quite disorganized, and so liquid that none could be saved for examination. The brain was normal, save for some adhesions of the arachnoid, which exhibited some cloudiness. Rigor mortis was not marked, though the examination was made six hours after death.

It is interesting to remark that in this case, as in other recorded cases, death was preceded by peripheral neuritis. The course of the symptoms is strongly suggestive of those accompanying Landry's acute ascending paralysis.

Wellington, New Zealand. G. E. ANSON, M.D.Cantab.

SCLEREMA NEONATORUM ASSOCIATED WITH PLACENTA PRAEVIA.

As the pathogeny of sclerema neonatorum is practically unknown, it may be worth while to record the following case: Mrs. N., 3-para, aged 34, was confined on December 17th, 1919. Labour was ushered in with a sharp haemorrhage at 5.30 a.m.; there was practically no pain, and the os barely admitted one finger. At 8.30 a.m. the os admitted two fingers, and there had been no more bleeding to speak of; I detached the placenta round the rim of the os as far as I could reach—the anterior edge of the placenta was just at the rim of the os at this stage—and gave pituitrin 1 c.cm. No further bleeding occurred. At 2.15 p.m. I ruptured the membranes and gave another injection of pituitrin; pains rapidly improved, and the child was born at 3.15 p.m. At birth the boy was blue and limp, and it was some minutes before respiration was satisfactorily established. The placenta was delivered normally at 3.40 p.m., and was of the type usual in these cases; the area I had detached was clearly distinguishable, and measured approximately six square inches. When bathing the child a little later, the nurse commented on the hardness—"like frozen meat"—of many of the muscle

masses, particularly the muscles of thighs and buttocks, and the hard swelling on the backs of the hands and feet; the skin appeared as if tightly bound down to the underlying muscle. Difficulty was experienced from the beginning in getting the child to swallow, and at first it refused to suck. Constipation was a trouble throughout. The child died on December 26th, death being ushered in by a sudden drop of body temperature and by an escape of pink-tinged fluid from mouth and nose.

On November 15th, 1919, Mrs. N. had had a single large haemorrhage which was sufficient to blanch temporarily the conjunctivae; and though she was taking iron in full doses from that time she was still markedly anaemic when the haemorrhage occurred which heralded the onset of labour thirty-two days later. The puerperium was uneventful except that the milk which came plentifully on the fourth day vanished on the eighth, perhaps because of the lack of stimulus as the infant was unable to suck.

Stafford. A. E. HODDER, M.B., B.Ch.Cantab.

Reports of Societies.

APPENDICULAR CONCRETIONS.

AT a meeting of the Section of Pathology of the Royal Society of Medicine, held on April 20th, with Dr. BULLOCH, F.R.S., in the chair, Dr. MURRAY demonstrated preparations and charts from three cases of malignant tumours in rabbits, in which autologous grafting had been carried out. The bearing of the results on the possibility of increasing or diminishing resistance to spontaneous cancer was discussed. Dr. LYON SMITH read a paper on direct haemolysis, a test for bacterial toxins, and for the quantitative estimation of doses of bacterial vaccines.

Professor S. G. SHATTOCK, F.R.S., made a communication giving the results of the systematic examination of twenty-five appendicular concretions, the examination being carried out by delamination under water; the concretions had at no time been allowed to dry. When an arbitrary centre of the size of a hempseed was reached, this was crushed in glycerin between a slide and cover-glass, and studied microscopically. In no instance was any nucleus present, the centre being of the same kind as the rest, and consisting of the undigested residues of plant tissues. In two or three the number of stiff pericarpal hairs present in flour and oatmeal was notable, but in no instance were they sufficient to constitute a nucleus after the manner of the oat hair concretions sometimes met with in the colon. In no example were any particles of steel, or of the enamel flakes from cooking utensils, present. The absence of these was opposed, therefore, to the suggestions that had been put forward in regard to the etiology of appendicitis in general—namely, that its increase was due to the introduction of enamelled ironware, or of the milling of flour by means of the cylindrical steel rollers now almost universally used. An examination of the contents of 100 appendices taken from subjects over 40 years of age, and of twenty-five from those between the ages of 15 and 25, dying from causes unconnected with the appendix, gave equally negative results in this respect. In a few of these, small faecal pellets were met with, which might be regarded as appendicular scybala; such appeared at times to furnish the starting point of concretions. The etiology of concretional formation, the author thought, resolved itself into neuro-muscular faults of the appendix, a matter of much interest in regard to ectasias and constrictions of the oesophagus, stomach, and intestine. The entry of faecal material into the appendix was presumably helped by the contraction of the caecum upon its contents, whereas the exit depended upon the appendix alone.

The factor of mechanical kink might be viewed as an exceptional one, since in concretional forms of appendicitis the organ retained its usual curvatures. As to roller-milled flour itself, the finest passed between as many as thirteen pairs of revolving steel cylinders. Yet the author had found that no inorganic iron could be chemically demonstrated in it. The skiagraphy of concretions, after being taken out of the excised appendix (and not allowed to dry), or whilst still in the excised organ, the author found, gave results too variable to prove a negative in clinical application. If the deposition of calcium carbonate and phosphate in the stercolith was well pronounced, a laminated picture was equally so; but if little, the picture was so faint that such a concretion would certainly escape observation in the living body. If the appendix, again, happened to lie behind the caecum, the picture would be obscured by the contents of the latter.

ANAESTHESIA FOR THYROID OPERATIONS.

AT a meeting, held on April 9th, of the Section of Anaesthetics of the Royal Society of Medicine, with Dr. HAROLD LOW, Vice-President, in the chair,

Mrs. DICKINSON BERRY read a paper on anaesthesia for operations on the thyroid gland. Her remarks were based upon an experience of 700 cases of operations for removal of goitre. In the past chloroform and its mixtures had been used either throughout or for induction, but since 1912 Mrs. Berry had relied entirely upon open ether, and had met with no fatality and little anxiety. She advocated an anaesthesia as light as was compatible with the requirements of the operator.

Atropine is used beforehand but not morphine; a slow induction is practised. The operation begins when regular breathing is established, even if the conjunctival reflex still persists. When the gland is reached ether is withheld if the patient is absolutely quiet. The eyes may open spontaneously or talking occur, the patient remaining quite motionless. Dislocation of the tumour is a dangerous process in cases of severe dyspnoea; the anaesthesia is kept specially light at this stage. Straining should occur when the last ligatures have been tied, in order to show any points which might lead to post-operative haemorrhage. Notes of cases illustrating the above and other points were read.

Two groups of cases were described as offering special dangers—those with much tracheal obstruction and those with cardiac trouble. For the former it was often necessary to use oxygen with the ether. The cardiac cases included those in which the heart was affected by long-standing dyspnoea, true exophthalmic cases, and cases of goitre not typically exophthalmic, but associated with cardiac symptoms.

Dr. J. F. W. SILK maintained that "team work" and a light form of anaesthesia were most important. He had found rectal oil-ether of great value, particularly in exophthalmic cases.

Mr. JAMES BERRY said that the anaesthetist should never begin the administration for a goitre operation until the surgeon had on gloves, gown, etc., and was quite ready to begin. It was sometimes necessary to perform the earlier stage of the operation very suddenly and rapidly on account of dyspnoea. In cases of dyspnoea it was well to ascertain to what extent the head could be extended without causing serious interference with breathing, and during the operation never to let it be extended beyond this amount. It was his custom to have the head held firmly throughout and turned only under special directions. In cases of dyspnoea the anaesthetist should acquaint himself before operation with the exact position and shape of the trachea. A unilateral goitre displaced the trachea to the opposite side, curved it, and flattened it on the side of the tumour. The point of maximum compression was nearly always 1½ in. below the cricoid. The dyspnoea was always due to direct pressure on the trachea and had nothing to do with irritation of recurrent laryngeal nerves. In cases where the heart was seriously affected its condition should be ascertained by *x*-ray and electro-cardiographic examination. Mr. Berry said that he was using local anaesthetics less and less for goitre operations and relying more and more upon light ether anaesthesia.

Dr. J. S. GOODALL thought the performance of any thyroid operation, except simple ligation, under local anaesthesia undesirable on psychic grounds. Any local anaesthetic containing adrenalin might induce auricular, and even ventricular, fibrillation. He had examined the hearts of many patients before, during, and after thyroid operations, paying particular attention to (1) degree of myocardial exhaustion, (2) amount of dilatation, (3) presence of definite myocardial degeneration, (4) height of systolic blood pressure. Electrocardiographic and *x*-ray examination, together with mapping out of the field of cardiac response, were essential in estimating the condition of the myocardium.

Dr. J. BLOMFIELD said that he used open ether for these cases, but relied more than the reader of the paper upon

preliminary injection of omnopon, scopolamine, and atropine. Many surgeons were uncomfortable if as light a degree of narcosis as that described by Mrs. Berry were employed. He related a case showing the necessity for the surgeon's being ready to operate from the first moment of induction of anaesthesia.

Dr. F. E. SHIPWAY preferred intratracheal ether in all goitre operations except the exophthalmic cases. All difficulties were removed by this method, particularly those due to pressure of the tumours upon the trachea, and a very light narcosis could be accurately maintained, permitting straining or coughing at the surgeon's desire. For exophthalmic cases he favoured oil-ether per rectum, preceded by large doses of morphine and scopolamine; the direct laryngoscope and catheter should be at hand.

Dr. HAROLD LOW said that the cases requiring special treatment were those in which the trachea was pressed upon and those with constitutional symptoms. He considered the ideal anaesthetic to be either intratracheal or rectal ether; next to these he placed open ether used to maintain a light degree of narcosis. Only skilled anaesthetists should undertake goitre cases.

Dr. F. S. ROOD divided goitre cases into three groups. (1) Simple tumours or cysts with no respiratory obstruction and no toxaemia; (2) patients with stridor and possibly definite respiratory obstruction and heart failure; (3) cases of exophthalmic goitre. In the first group the choice of anaesthetic was not specially important. In the second group he preferred chloroform to ether; in the exophthalmic cases he thought it most important to guard against the element of fear, and a preliminary injection of morphine and scopolamine was most useful.

ISCHAEMIC CONTRACTURE.

AT a meeting of the Royal Medico-Chirurgical Society of Glasgow, held on April 16th, the President, Mr. A. ERNEST MAYLARD, being in the chair, Dr. J. SCOULER BUCHANAN and Dr. WALTER W. GALBRAITH showed two cases of effusion into both knee-joints due to congenital syphilis. In the first case, that of a boy aged 11 years, previously healthy according to his parents' account, the only symptoms had been a feeling of tiredness in the legs, with little or no pain, and swelling of the knees without tenderness or restriction of movement. He showed, however, some keratitis, fissures about the mouth, and pegged teeth; both he and his father gave a positive Wassermann reaction. In the second case, a boy aged 13 years, stiffness and swelling of the knee-joints were first complained of after a fall from a height on to his knees. Except a slight degree of "sabre-blade tibiae," the boy showed no evidence of congenital syphilis, but both he and his father gave a positive and his mother gave a "suspicious" Wassermann reaction.

Mr. ARCH. YOUNG showed a case of Volkmann's ischaemic contracture of the forearm, treated by manipulation and splinting.

The patient, a boy aged 11 years, was admitted to hospital in March, 1918, for simple fracture of both bones of the forearm slightly above the middle. Under an anaesthetic the arm and forearm were put up on an anterior (flexor) splint of moulded metal bent at right angles at the elbow (the forearm being fully supinated), supplemented by a corresponding moulded poroplastic splint applied to the extensor aspect of the forearm only. Six days later, on account of pain at the elbow and disability in finger movements, the splints were removed and put up less firmly, there having evidently been excessive pressure by the anterior splint at the bend of the elbow. By March 22nd there was well marked tendency to contracture of the fingers, and the patient, when dismissed on May 14th, was ordered to attend the outdoor department for massage and passive movement. On October 26th he was readmitted to hospital with well marked ischaemic contracture and atrophy of all the muscles of forearm and hand; the fingers were constantly flexed when the wrist was dorsiflexed, but extended slightly when the wrist was palmar flexed. The treatment adopted was on the lines of that described by Jones of Liverpool, but differed from it in detail. Under an anaesthetic the four fingers were separately stretched and fixed, fully—or almost fully—extended, in individual moulded sheet-tin splints, previously sized and fitted on the other hand, and covered in advance with lint. These being secured, maintenance of the palmar flexion of the wrist was obtained by applying a long metal splint duly padded and fixed on the extensor aspect of forearm and hand. At the end of a fortnight the splints were readjusted, flexion at the wrist being reduced and extension at the metacarpo-phalangeal joints increased. A fortnight later the fingers and wrist were further manipulated, and fixed again with the wrist still flexed and the metacarpo-phalangeal joints more extended. Twenty days later the fingers and wrist were freely manipulated and splints reapplied with the contracture almost fully corrected. Sixteen days later, after manipulation of the joints, a moulded and padded splint was applied on the palmar aspect of the forearm and hand from beyond the finger-tips to two-thirds of the way up the forearm, this splint being considerably dorsiflexed at the wrist; at the same time the special finger splints were discontinued. On the occasion of each readjustment of splints a general anaesthetic was given. Less than a week later the long splint was removed; massage was instituted and continued for some time, together with electrical treatment.

When the boy was shown to the society more than a year later the function of the limb was very good, but there was still disparity in muscular development of the two forearms, particularly in the flexor pronator groups. There had been slight recurrence of the contracture, especially of the middle finger, but not such as substantially to impair function, nor to be readily obvious. Sensation to touch was good, and all the muscles acted. Such contracture as existed was mainly of the flexor profundus. It might yet be desirable to renew the splinting in order completely to restore freedom of extension to fingers and wrist.

Mr. MAYLARD showed a specimen of hypertrophic stenosis of the pyloric orifice removed by operation from an adult. When admitted to hospital, the patient, a woman aged 36, was of poor build, very thin, with abdomen somewhat distended, and a firm, movable mass, rather tender, palpable in the right iliac region. She gave a history of rapidly increasing emaciation, of constipation, and latterly of pain in the right hypochondrium (followed by vomiting) shortly after taking food. The abdomen was opened by a transverse incision just above the umbilicus, when a freely movable pyloric tumour was found, associated with a greatly dilated stomach. In the belief that this was a growth, the pylorus, with half the stomach, was excised, and the continuity of the canal re-established by performing a "no-loop" posterior gastro-jejunostomy. The patient did well for three days, taking nourishment without any discomfort, but on the morning of the fourth day the temperature suddenly rose, and she died a few days later from double pneumonia. The pathologist reported on the specimen that there was stenosis of the pylorus, with marked hypertrophy of the muscular ring, but no evidence of tumour tissue suggestive of new growth, and no indication of recent or healed ulcers. Microscopical examination showed regularly arranged tubular glands which passed deeply, no new formed tissue round the glands, and hypertrophy and diffuse interstitial fibrosis of the muscular tissue.

EXPECTANT TREATMENT IN ECLAMPSIA.

AT a meeting of the North of England Obstetrical and Gynaecological Society, held at Leeds on April 16th, the President, Mr. MILES H. PHILLIPS, being in the chair, Mr. W. GOUGH (Leeds) presented an analysis of 61 cases of eclampsia treated at the Leeds Maternity Hospital during the last ten years; 47 were primiparae and 14 multiparae. The average age was about 26 years; multiple pregnancies occurred three times and hydatid mole once; in one case only was there a history of previous eclampsia.

The speaker brought this subject before the society with a view to advocating the expectant method of treatment. In 5 cases in which pregnancy was artificially terminated 2 died—a mortality of 40 per cent. In the remaining 56 cases the only treatment adopted was expectant, and followed closely the lines of that advocated by the Dublin and Glasgow schools; in a few cases delivery was hastened by forceps late in the second stage, but this was the only operative treatment. In 9 cases, the fits commenced postpartum, and of these one died. Of the remaining 47 cases 5 died, excluding 1 death caused by a perforated gastric ulcer. The maternal mortality for this group of cases was therefore 8.5 per cent. As regards the children, in the cases where labour was induced one child was born alive and 4 were stillborn. Where no operative interference was carried out, 24 were born alive and 21 were stillborn; in one the pregnancy was a hydatid mole, and the remaining patient recovered from her eclampsia and went home undelivered. He was convinced, therefore, that much better results were obtained for both mother and child if labour was allowed to come on spontaneously.

The PRESIDENT congratulated the Leeds Maternity Hospital on their excellent results. The maternal

mortality was much lower than any figure he had seen published hitherto. At the Jessop Hospital, Sheffield, the mortality over a similar period was nearly 25 per cent. in 177 cases; it varied very much from year to year, however. He thought Caesarean section good treatment in carefully selected cases, and had obtained several very satisfactory results from it.

Dr. BRIDE (Manchester) had analysed the cases treated at the St. Mary's Hospitals, Manchester. During the last ten years 220 cases were admitted, and the mortality was nearly 33 per cent. The figure varied much from year to year, in one year being as low as 12 per cent.; it was of interest that in that particular year the pregnancy was generally terminated by rapid dilatation of the cervix and immediate extraction.

Dr. HELLIER thought that Caesarean section was sound treatment if carried out by competent operators and in suitable surroundings. Where this was not possible the expectant method was much safer.

Dr. DOUGAL (Manchester) was of the opinion that cases varied so much in type that one method of treatment was not always the best. He had tried Caesarean section with disappointing results, but the cases were chosen because of their severity. He thought it possible that this mode of treatment might give the best results if carried out in every case at an early stage of the disease.

AT a meeting of the Pathological Section of Liverpool Medical Institution, held on April 15th, with the President, Dr. J. E. GEMMELL, in the chair, Mr. F. C. LEWIS read a note on the standardization of the blood-cell suspension in complement-fixation tests, and demonstrated his thesis *in vitro*. He laid emphasis on the fact that different workers used suspensions of different strengths, and further, that the method generally adopted for making the suspension led to irregularities in the strength. It was suggested that variations in the result of Wassermann tests applied to the same serum could, other factors being equal, be explained on the assumption of a variable minimum haemolytic dose of complement. A plea was made for the use of a uniform and gravimetric suspension in order to ensure that the term "minimum haemolytic dose of complement" was common to all laboratories. Mr. JOHN T. MORRISON contributed a short paper on diseases of the male breast, with special reference to chronic mastitis. The general similarity to diseases of the female breast was pointed out, and a brief description given of the malformations, acute inflammations, granulomata and neoplasms affecting the gland. The condition, unsatisfactorily termed "gynecomastia," was discussed in detail. Histological reports were very few in number, but none confirmed the suggestion that the condition was a true hypertrophy of mammary tissue. On the other hand, there was evidence that a slow, quiet inflammatory process was at work in most instances. In cases of frankly chronic inflammation the breast, or a nodule within it, felt as a firm well-defined tender mass; axillary adenitis might be present, but suppuration was rare. Histologically there was an increased formation of fibrous tissue, with sometimes, in addition, an increase in the number of ducts; inflammatory reaction was noted at this latter site. It was recommended that cases which did not react to rest and the application of heat should be excised and examined microscopically. The suggestion was made that the lactiferous ducts, or their accompanying lymphatics, were the path of entry of the causal factor. The paper was freely illustrated by lantern slides.

H. LECLERC (*Bull. Soc. de Thérap. de Paris*, February 10th, 1920) reports several cases, including that of himself, in which consumption of large quantities of cress gave rise to dysuria, vesical spasm, and (in one instance) priapism. Examination of the urine showed no characteristic changes, and in only one case did the sediment reveal an abnormal amount of epithelial desquamation. The symptoms, moreover, were of such short duration that they were apparently due to a transient irritation of the vesical mucous membrane, and not to actual cystitis. Chemical analysis of the cress showed the presence of iron, iodine, and a sulphonitrogenous essence, to the irritating properties of which it was thought probable the symptoms were due, since after being cooked (whereby the essence was destroyed) the cress did not produce any toxic symptoms. Leclerc had not been able to find any description of these effects of cress in medical literature, but a passage in the *Thesmophoriazusae* of Aristophanes showed that they were well known to the ancient Greeks.

Reviews.

THE NAVY IN THE WAR.

THE first volume of Sir JULIAN CORBETT'S account of the *Naval Operations*[1] which began on August 4th, 1914, brings the story down to the battle of the Falklands in December of that year. It is the beginning of a History of the Great War prepared by direction of the Historical Section of the Committee of Imperial Defence. The Admiralty has given the author access to official documents, but declares itself "in no way responsible for his reading or presentation of the facts as stated." Among the official papers used are depositions of prisoners and captured documents, and recourse has been had also to unofficial publications—British, allied, and enemy. The author's main difficulty must have been the choice of material from the enormous mass available; the success with which he has surmounted it is remarkable. There are places where the mass of detail becomes oppressive, but in his handling of the larger incidents Sir Julian Corbett shows that he can be fired by a story and tell it well. He is judicious in commenting on British failures in judgement or enterprise, and generous in his tribute to any display of gallantry by the Germans, as when von Spee turned back to fight at almost hopeless odds at the Falklands. The narrative is kept well on the move; the reader is carried easily from incident to incident, and gradually obtains not only a general view of the course of the operations but a comprehension of the strategical principles by which they were guided. The volume contains some silhouettes of ships and a series of maps and plans which will probably suffice for most readers. The serious student will find eighteen large maps in a case supplied with the volume. All the maps are drawn by the Historical Section of the Committee of National Defence.

The period covered is comparatively short—barely five months—but it was a time when active operations were being carried out on many seas. The navy did its work so thoroughly that the area to be dealt with in later volumes will be narrower, and the story, therefore, in that respect less complicated. To the civilian the most interesting chapters will probably be those which deal with the "British War Book," and those describing the procedures during the time of "Strained Relations" and the "Precautionary Period," the vexed question of the escape of the German cruisers *Goeben* and *Breslau* to the Bosphorus, and the combined naval and military operations during the attempted relief of Antwerp and the fighting along the Belgian coast. The accounts of the important actions at Heligoland and the Falkland Islands probably contain little which has not already been published to some extent elsewhere, but the movements of von Spee's squadron in the Pacific are related in great detail, and the motives which may have led Admiral Cradock to accept action at Coronel against almost hopeless odds and in the absence of the vessels which had been specially detailed "to ensure his safety" are fully discussed.

The volume contains few references to medical affairs; the intention appears to be to publish the medical history by instalments in the *Journal* of the R.N. Medical Service; if so, it is to be hoped that the articles will eventually be published in a connected form. The story of Coronel and the Falklands confirms the belief that in a general action the defeated side loses so heavily in ships that the work of the medical service is wiped out. There were no survivors of *Good Hope* and *Monmouth* sunk at Coronel. Of the crew of *Scharnhorst* (11,420 tons), sunk at the Falklands, not one was saved. Of her sister ship, *Gneisenau*, it is said that out of a complement of 850 she had 600 killed and wounded; as 200 were picked up, this may be an over-estimate, but it gives some idea of the condition to which the crew of a beaten ship that fights to the last is reduced. These two ships were sunk by *Invincible* and *Inflexible*, and on neither ship was there a single casualty, though the former was hit a score of times. The *Emden* (3,592 tons), which also fought to the last, was beached; she had, apparently, a complement of 316, of whom 115 were killed; the prisoners numbered 211, of whom 56 were wounded.

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[1] *Naval Operations*. Vol. i. By Sir Julian S. Corbett. London: Longmans, Green, and Co. 1920. (Demy 8vo, pp. xiv + 470; case of maps. 17s. 6d. net.)

To the reader who is interested in the Naval Medical Service and desires to understand the difficulties which, under modern conditions, it has to surmount, no part of the volume will be more informing than the Introduction, in which Sir Julian Corbett briefly relates the changes in strategical plans which had to be made during the ten or twelve years before the war. They were rendered necessary in part by the increase in the size and range of guns and in the efficiency of torpedoes and submarines. But the change of fundamental importance was that our principal enemy in any future war based its growing navy on North Sea ports.

For the easily defended English Channel, in which the old enemy had no naval base of any importance, there was the expanse of the North Sea, with its broad and stormy outlet between Scotland and Norway, and the new enemy was so placed as to have entries to it at two widely separated points which are linked together by a perfectly protected inland waterway. Finally, instead of our southern seaboard, rich in well-disposed naval ports, we had, facing the enemy, a long stretch of coast dotted with vulnerable commercial ports, but without a single fleet base of the first order, except Chatham, which, owing to navigational difficulties, was incapable of being adapted to modern war conditions.

It was therefore decided in 1903 to make Rosyth in the Firth of Forth a first-class base, but within five years it was seen that it would not contain such a fleet as we needed; consequently plans were extended to Cromarty Firth and Scapa, and it was to Scapa that the Grand Fleet went on August 1st, 1914. The changes in the strategic plans affected every branch of the Navy, the medical with the rest. It had to adapt itself as best it might to the new conditions. Scapa, without defences, was equally without the buildings and equipment required for the medical services of the largest fleet ever assembled. The principal naval hospitals were in the south of England—at Plymouth, Portsmouth (Haslar), and Chatham, the last and nearest being some 600 miles from Scapa. How the situation was being met in 1917 was told in our columns by Sir James Porter and Staff Surgeon Vavasour Elder in that year. Nobody would be more competent to complete the story than the present Medical Director-General R.N., Sir Robert Hill, who was Principal Medical Officer of the Grand Fleet.

The interest of the story Sir Julian Corbett tells in this first volume is absorbing; it ought to be widely read, and we are glad to note that its price is moderate considering the high cost of producing so large a volume and eighteen large maps under existing conditions.

THE ENGINES OF THE BODY.

IN *The Engines of the Human Body*[2] Professor KEITH has reproduced the substance of his Christmas Lectures delivered at the Royal Institution in the winter of 1916–17, elaborated and extended.

The purpose of the book, as it was of the lectures, is to present to a lay audience the human body as an engine, or rather as a combination of many engines of varied structure and action. The book deals primarily with the muscular system of the body, and may be conveniently divided into two parts, according to whether it is the voluntary or involuntary muscular system which is under consideration. The first portion has not, perhaps, for a medical public the same interest as the second portion, and the homology between a muscle and the internal combustion engine of a motor cycle strikes us, despite the highly ingenious arguments of the author, as rather strained. No attempt is, indeed, made to establish a strict parallelism between the two, and such fundamental differences as the multiplicity of the muscle engines, and the associated action of antagonistic muscles eliminating the characteristic jerkiness which is the feature of mechanical movements are well and clearly emphasized. Due insistence is also laid on the fact that the muscles as living tissue can respond to additional calls made upon them in a way no mechanical engine can rival, although, on the other hand, they are subject to a sense of weariness of which an engine can have no experience.

The second portion of the book, to adopt our own method of division, is concerned with the action of the involuntary muscular system, and here the chapters dealing with the heart and the circulation, with respiration and digestion, are of special interest. It is particularly in these chapters that Professor Keith shows Nature and the engineer contending, if we may say so, with each other to obtain desired results. Although Nature is often, consciously or unconsciously, closely imitated, the superiority of her methods, her efficiency and economy, is never really in question. The instance which the author mentions in which he states that man seems to have stolen a march on Nature—namely, in the matter of wireless waves—is not, we venture to think, above dispute. "There is no evidence," he says, "which leads us to believe that Nature has ever used her wireless waves to provide a communicating system for linking living units together." That Nature does not habitually use this method of communication does not necessarily imply that she has not in the past and could not in the present supply such a system. She may have found the system unnecessary and inconvenient.

From the mechanical point of view everything is said, and said well, regarding the admirable pumping qualities of the heart, the perfect and economic piston-like action of the diaphragm, and the ingenious propelling power of the intestines. In connexion with this last matter Professor Keith compares and suggests that the comparison is close between the movements of the intestines and the movements of an earthworm. He does not, however, remark upon the important help which the worm obtains from its chaetae, and thus loses an opportunity of homologizing the chaetae with the fibres of the involuntary muscular tissue in the mesentery. The important part also which the mesentery plays not merely in supporting the intestines, but in preventing the intestines from forming those tangled coils in which the "resting" earthworm is frequently found, might have been mentioned.

The important parts played by chemical and psychological stimuli are adequately described, and much recent physiological knowledge on these matters is incorporated in the book, which is thereby made of very considerably greater interest and value. The work has the further and special merit of demonstrating more clearly than ever before the universal application of anatomy and physiology to other branches of human knowledge, and more than suggests that the chemist, physicist, engineer, and architect will find in the study of these subjects the solution of many of their problems, although no doubt there will always remain some residuum only to be resolved when, if ever, the secret of life has been disclosed.

Finally, no reference to the book would be complete which failed to express appreciation of the personal and historical passages which here and there lighten up its pages. If any criticism were passed upon these it would be that Professor Keith is somewhat inconsiderate in ignoring the work of Harvey's predecessors and contemporaries in connexion with the discovery of the circulation of the blood. Did, again, Sir Charles Bell find no warmth of welcome in London? Bell's account of his reception at the home of Sir William Blizard for some reason or other remains in our memory, and suggests that here and there at any rate he had as warm a welcome as could reasonably be expected.

These are, however, very minor matters. What is of real importance is that Professor Keith has managed, in a characteristically interesting and suggestive manner, and within the small compass of 280 pages, to convey much of our present-day knowledge regarding the principles upon which the human body is constructed, and the way in which its several parts perform their allotted tasks. The book is one which deals with these matters from a particular point of view—namely, that of the engineer; it is a point of view which was well worth stating, and we believe that there is no one in our profession who could have expressed it as adequately or as effectively as Professor Keith.

VENEREAL DISEASES.

COLONEL L. W. HARRISON'S *Manual of Venereal Diseases for Students*[3] resembles very closely the author's previous publication, *The Diagnosis and Treatment of Venereal Diseases in General Practice*. It is, however, as its

[2] *The Engines of the Human Body.* By Professor Arthur Keith, M.D., LL.D.Aberd., F.R.S. London: Williams and Norgate. 1919. (Demy 8vo, pp. xii + 284; 47 figures, 2 plates. 12s. 6d. net.)

[3] *A Manual of Venereal Diseases for Students.* By L. W. Harrison, D.S.O., M.B., Ch.B., M.R.C.P.E., Brevet Colonel R.A.M.C., and K.H.P. (ret.). London: H. Frowde, and Hodder and Stoughton, Ltd. 1920. (Cr. 8vo, pp. 375; 19 plates; 63 figures. 16s. net.)

name implies, written for the medical student rather than for the qualified practitioner, and has been in certain directions condensed and simplified. But at the end of this process, and with all unnecessary details eliminated, venereal disease remains a formidably large subject in the curriculum of the medical student. Whether Colonel Harrison's estimate of the amount of knowledge of venereal disease that a student should be expected to obtain is excessive or not does not alter the fact that his *Manual* is an excellent work. Within its three hundred odd pages is condensed an immense amount of useful information—that is to say, information which is useful in the treatment of disease as well as in satisfying examiners. We believe, indeed, that the book will prove as useful to the general practitioner as to the student. It contains all that is essential of its forerunner, and some valuable additions—for example, a short description of the urethroscope and of its use in diagnosis and treatment has been added, and greater precision has been given to the chapter on the treatment of gonorrhoea in women. Where it has been necessary to make sacrifices in order to keep the book within the necessary bounds, points of theory rather than of practice have been cut out. In several places the blue pencil has been used to advantage, and chapters that were overloaded and guilty of repetition in the earlier work have gained in conciseness and vigour. As a result of this it is easier to seek out a particular point on which information is required. Where space is an all-important consideration a writer is compelled *malgré lui* to be dogmatic. This, though it may seem a disadvantage to the expert, is a boon to the beginner. Indeed, we feel that in many ways the *Manual* is an even better work for practitioners and students alike than its predecessor. In a chapter on the prevention of venereal disease the subject is regarded from the public health standpoint, and statistics are given of the results of prophylactic measures during the war. At the end of the book are four useful appendices. The first gives a clear sketch of the principles underlying complement fixation tests, and the second an account of staining methods employed in the detection of micro-organisms. The third and fourth appendices contain some formulae useful in the treatment of gonorrhoea and syphilis respectively. We have no hesitation in saying that *A Manual of Venereal Diseases for Students* is the best work on the subject that we have seen. It should have many editions.

Dr. WANSEY BAYLY'S book on *Venereal Disease: its Prevention, Symptoms, and Treatment*,[4] adds another to the list of useful small volumes dealing with these maladies in the light of modern knowledge. The author is a well known writer on this question, and his position as honorary secretary to the Society for the Prevention of Venereal Disease gives additional interest to the views expressed. The book opens with a chapter on prevention, in which the many-sided aspects of this complicated problem are indicated under various heads. Nevertheless, until some working agreement is reached between the two existing camps, all that is here written cannot be regarded as final. The part dealing with the clinical side of the subject is clear and informing, and shows in a practical manner how diagnosis and cure can best be effected in the different sorts and degrees of infection. Particularly striking are the clinical illustrations, the novel method employed conveying a clear suggestion of the diseased condition. The volume contains in short form the more important facts, and will be found a useful textbook for those embarking upon a study of these maladies. The concluding chapter discusses the organization, administration, and routine work of a venereal clinic.

UROLOGY OF TROPICAL DISEASES.

DR. JOSEPH KHOURI, in the preface to his essay on the pathological urology of hot countries,[5] has pointed to the important place that tropical disease now occupies amongst medical studies. The world war has brought very many European medical men into contact with tropical diseases that in former years had been to them merely unfamiliar names in medical textbooks. But whilst many excellent textbooks on tropical complaints are in existence, no author has previously attempted to treat the subject purely from the standpoint of the urologist. It is therefore with the idea of supplying a complete synopsis of the urology of tropical diseases that Dr. Khouri has written his book.

Under the headings of the various tropical diseases known to medicine are given concise accounts of the changes that occur in the urine. But although the careful examination of the urine is undoubtedly an important step in arriving at a diagnosis, it is to the research worker rather than to the ordinary practitioner in tropical diseases that Dr. Khouri's monograph will primarily appeal. The author writes as a pure scientist, and as a chemist rather than as a clinician. He has collected a large number of scientific facts and placed them at the service of all who may be disposed to undertake research along similar lines; and to each chapter he has appended a very complete bibliography. The book is the result of twenty years' work in Egypt, and undoubtedly contains much that is of value.

The second part deals with the elimination of drugs by the kidneys and with methods of detection and estimation. Much of it is the result of the author's original observation. Altogether the subject has been treated with great completeness and accuracy. It is a book to which future research workers in tropical medicine will certainly appeal.

NOTES ON BOOKS.

REMARKING that there are already far too many medical periodicals that the overworked medical man is expected to read in Germany, Professor BRUGSCH of Berlin prefaces a new one, the *Ergebnisse der gesamten Medizin*,[6] with the pious hope that it may give a true and complete picture of current medical practice and progress; and no doubt the corollary is that all other medical periodicals will become superfluous now that this compendious summary is available. The first number contains five-and-twenty articles on the symptoms and treatment of disease, speaking generally. With regard to the subjects dealt with in these articles, it may be pointed out that eczema, diphtheria, gonorrhoea, and the like are subjects the general practitioner of medicine will be glad to read about in these pages; but will he have much use for the article on "Dysbasia angiosclerotica"? The various authors of these reviews give numerous references to the literature of their subjects, almost entirely excluding work done outside the borders of the Central Powers; we notice, however, that the important paper on "Trench Fever," by McNee, Renshaw, and Brunt, that appeared four years ago in the BRITISH MEDICAL JOURNAL is quoted under the title "Frenshfever," and under the names "Mc. Nee, Reuschan, and Brand," in these *Ergebnisse*. How often the periodical is to appear does not seem to be stated; its price—180 marks in paper, 240 marks bound—may be taken as an index of financial stringency rather than intrinsic merit. Broadly speaking, it appears too abstract a periodical for practical men, too loosely written and second-hand for men of science.

Dr. ROCKWELL'S *Rambling Recollections*[7] afford the reader an admirable picture of the happy insouciance of high class medical practice in America during the last third of last century, and give an attractive and entertaining description of the author's intercourse with countless Americans of note and notoriety. During the course of a long professional career Dr. Rockwell has been brought into contact with all sorts and conditions of men, and the story of his experiences as an army surgeon in the civil war, and as one of the first to introduce electrical treatment, interspersed with human touches at every point, should appeal to readers of all classes.

In *Domus Doloris*,[8] Mr. COMPTON LEITH offers an etherealized and philosophic picture of hospital life and hospital work during the war, purged of gross detail,

[4] *Venereal Disease: its Prevention, Symptoms, and Treatment.* By Hugh Wansey Bayly, M.C., late Surgeon R.N. (temporary) and Acting Major R.A.M.C.T.F. London: J. and A. Churchill. 1920. (Med. 8vo, pp. viii + 152; 51 figures. 10s. 6d. net.)

[5] *Essai d'Urologie Pathologique des Pays Chauds.* Par Joseph Khouri, Docteur de l'Université de Paris (Pharmacie). Paris: J. B. Baillière et Fils. 1919. (Med. 8vo, pp. v + 183. Fr. 6.)

[6] *Ergebnisse der gesamten Medizin.* Unter Mitwirkung hervorragender Fachgelehrter herausgegeben von Professor Dr. Th. Brugsch, Oberarzt der II med. Klinik der Königlichen Charité in Berlin. Erster Band. Berlin and Vienna: Urban and Schwarzenberg. 1920. (Imp. 8vo, pp. 653; 160 figures, 14 plates. M. 180 in paper; M. 240 bound.)

[7] *Rambling Recollections.* An Autobiography. By A. D. Rockwell, M.D. New York: Paul B. Hoeber. 1920. (Roy. 8vo, pp. 332; 7 illustrations. 4 dols. net.)

[8] *Domus Doloris.* By W. Compton Leith. New York: John Lane Co. London: John Lane. 1919. (Cr. 8vo, pp. 222. 7s. 6d. net.)

analytical, redolent of the classics, in touch with humanity and the larger soul through all the avenues of feeling. Such literature as this, with its graceful cadence and dreamy sentences, falls pleasantly on ears deafened by the din of the market place, and should serve to bring home to its readers the deeper meanings and moral lessons that may be drawn from the war and all the sufferings it entailed. We commend this book to the attention of the many readers of all classes who welcome poetic prose and the distraction from the commonplace it offers.

Three lectures on various aspects of *Education in War and Peace*,[9] by Dr. STEWART PATON of Princeton, deal out to the patient reader a series of generalities on the aims and methods of education, the relations of the mind to the body, the interest of psychiatry and the study of social misfits, from the point of view of an American university lecturer in neurobiology and psychiatry. He urges the importance of studying the genesis of the social unrest and emotional disorders now so prevalent throughout the world.

Miss BARBARA LOW'S *Psycho-Analysis*[10] gives the general reader and teacher some insight into a subject that has suffered as much from its defenders as its critics. The book is short, generalized, and written in a highly appreciative manner; it is perhaps stronger on the theoretical side than the practical.

[9] *Education in War and Peace.* By Stewart Paton, M.D., Lecturer in Neurobiology, Princeton University, etc. New York: Paul B. Hoeber. 1920. (Cr. 8vo, pp. ix + 106. 1.50 dols. net.)

[10] *Psycho-Analysis.* A Brief Account of the Freudian Theory. By Barbara Low, B.A. Introduction by Ernest Jones, M.D., M.R.C.P. Lond. London: George Allen and Unwin, Limited. 1920. (Cr. 8vo, pp. 191. 5s. net.)

THE LONDON RADIUM INSTITUTE.

ANNUAL REPORT OF THE MEDICAL SUPERINTENDENT, MR. HAYWARD PINCH, F.R.C.S., FOR 1919.

THE Radium Institute in Riding House Street, Portland Place, London, was opened in August, 1911. In his annual report for 1919, Mr. Hayward Pinch, F.R.C.S., the medical superintendent, who expresses his acknowledgements to Dr. J. E. A. Lynham (assistant), has taken the opportunity of summarizing some of the conclusions he has reached with regard to the method of using radium. Special attention is directed to the construction of apparatus, to application in various situations and for various purposes, to variations in the reactions, local and general, to the sequelae occasionally met with, and to the measures taken for the protection of radium workers from the local and general effects of the rays. Prognosis is discussed at some length in order to indicate what benefit may reasonably be expected from radium therapy. These sections are founded on Mr. Pinch's twelve years' experience, and on the administration of over 70,000 treatments.

APPARATUS.

The rays emitted by radium salt and radium emanation are identical, and both are used at the Institute. The therapeutic power of alpha rays, which consist of positively charged atoms of helium, with a velocity of one-fifteenth that of light, is negligible, as they are stopped by thin metal, glass, paper, rubber, or a few centimetres of air. The velocity with which the beta rays—consisting of negatively-charged bodies—are projected is of the same order as that of light, but varies so that three types are distinguished—soft, medium, and hard—the velocity of the first being least and of the last greatest. They are of the same type as the cathode rays produced in a vacuum tube. Gamma rays are considered to be analogous to very penetrating Roentgen rays; their passage through metals produces "secondary" or "excited" rays, which may cause considerable surface irritation.

When radium salt is used the strength of the apparatus is expressed in terms of hydrated radium bromide, which contains 53.6 per cent. of radium, but as it is a deliquescent salt, it is converted into the insoluble sulphate and is used either in capillary glass tubing or on applicators of various sizes and three strengths, containing in the square centimetre—full strength 1 cg., half strength 0.5 cg., and quarter strength 0.25 cg., corresponding roughly to the French classification of 2,000,000, 1,000,000, and 500,000 activities. An advantage of the applicators is that the emitted radio-activity is always constant, and the apparatus if carefully handled needs little attention beyond an occasional renewal of its varnish. Radium emanation is used either in tubes or in hollow applicators of thin german silver or glass. The loss of value of radium emanation, due to decay of the emanation, can be provided against. During the first twenty-four hours the emanation loses exactly 16 per cent. of its activity; it is therefore possible to make an apparatus the mean activity of which for twenty-four hours shall be practically the same as that of a radium salt applicator of known strength. For example, to obtain the effect of an exposure of twenty-four hours with emanation equal to that emitted by 100 mg. of radium bromide, an emanation tube is used possessing an initial activity of between 109 mg. and 110 mg.; at the end of twenty-four hours it will have fallen to between 92 mg. and 93 mg., so that its mean activity for the whole period will be as nearly as possible that of 100 mg. of radium salt.

Clinical experience has rendered it possible to reduce the number of screens to four types:

Aluminium, 0.01 to 0.2 mm. in thickness.
Silver, 0.2, 0.5, and 1 mm. in thickness.
Lead, 0.1, 1.0, 1.5, and 2 mm. in thickness.
Platinum, 0.3 mm. in thickness.

The best screen for general use, whether for tubes or applicators, is 1 mm. of silver, which reduces the percentage of beta rays to 1.18, but of gamma rays to 95.5 only. Aluminium screens are used in the treatment of superficial and non-malignant cutaneous lesions, and platinum for small but powerful tubes to be buried in small malignant growths in the neighbourhood of the mouth, fauces, and air passages. Lead screens 2 mm. thick cut off nearly all the beta rays, but allow the gamma rays to pass to the extent of 92.8 per cent. Screens of various forms are used to suit the situation and purpose in view. Investigations have been made in the Research Laboratory of the Institute to ascertain the best method of absorbing secondary rays excited in thick screens of heavy metal, which, as has been said, cause considerable surface irritation. It has been found that the emergent secondary rays from a lead screen 2 mm. thick can be completely absorbed for all practical purposes by a layer of aluminium 2 mm. thick; the lead screens now used have an aluminium sheath of this thickness.

A flat applicator should be somewhat larger than the lesion to be treated. Healthy skin and tissues surrounding the lesions should be protected by a layer of lead rubber; the lesions should be cleansed and dried, and the applicator, if used unscreened, covered with a thin layer of rubber sheeting to protect it from moisture or discharge. The method of burying tubes in growths varies according to the situation. Whenever it is possible to bury a tube this is done, because the radiation from it is centrifugal and the whole of its activity is made effective; if merely laid upon the surface, little more than 30 per cent. of the rays come into action. Details of the method of application in various positions are given.

REACTION.

All tissues when treated with radium respond by a reaction, the nature and extent of which is determined by a number of different factors.

Mucous surfaces are much more responsive than dry skin, and moist skin or surfaces more than dry. Carcinomatous or sarcomatous tissue does not show the same resistance to radium rays as normal cells, and it is upon the appreciation of this fact that successful radium therapy largely depends. Tissues which have previously been treated much with *x* rays or ionization, or by CO_2 snow, or cauterization, require special care, as slight overdosage may be followed by breaking down of old scar tissue far beyond the area it is desired to affect. The extensive dissection required in the performance of Wertheim's hysterectomy seriously impairs the vitality of the pelvic tissues for some time, so that the propriety of giving radium treatment within three or even six months must be carefully considered. The reactions in persons suffering from locomotor ataxy, syringomyelia, paralysis, or other diseases affecting the functions of the trophic nerves, are often extensive.

The reaction is influenced not only by the strength of the applicator but by the size of the area to which it is applied. Further, marked personal idiosyncrasies are observed; in neurotic persons both the local and systemic reactions are likely to be greater than in the phlegmatic. In the treatment of some uterine conditions it is desirable to use only half strength in persons of neurotic temperament.

Four degrees of local reaction are distinguished:

1. Simple erythema.
2. Erythema followed by desquamation.
3. Vesication with superficial ulceration.
4. Deep ulceration, generally followed by the formation of a definite "limpet-shell" crust, beneath which repair takes place.

The interval before reaction takes place varies. Sometimes it is short; this is particularly noticeable in capillary naevi. On the other hand, in treatment for rectal disease the reaction may not come on for three weeks or more, and may then persist for a month or six weeks, not disappearing entirely for about three months.

Systemic reaction may occur when a large quantity of radium has been employed and long exposures given; on or about the fourth day after the termination of the treatment the patient suffers from languor, nausea, sometimes vomiting, and a rise of temperature to 100° or 101°. These symptoms, no doubt due to autointoxication, may be ameliorated by the judicious employment of laxatives and diuretics. In exophthalmic goitre the first effect of the treatment is often an exacerbation of the symptoms, due probably to an increased influx of thyroid secretion into the blood stream.

Sequelae.

Certain late effects must be guarded against: among them are pigmentation and telangiectasis, noticed especially after treatment of cutaneous naevi; the risk cannot be altogether avoided, but it may be diminished by taking care to avoid vesication. Patients should be seen every three months for at least two years, and any telangiectasis destroyed with a fine electric cautery. Pigmentation may be kept in check by the application of a weak lotion of mercury bichloride and glycerin. Superficial ulceration sometimes follows prolonged treatment of naevoid growths; the treatment must then be suspended for at least six months, and resumed with care.

In the vagina or rectum frequent exposures with heavily screened applicators may be followed by a considerable degree of progressive annular fibrosis, which will require dilatation with the finger or bougie.

Exposures.

The length of exposure varies according to the object it is sought to attain; exposures of three to fifteen minutes, using half-strength applicators unscreened, are generally used in the treatment of superficial cutaneous lesions, such as chronic eczema, lichenification, and psoriasis; exposures of thirty to ninety minutes, with half or full strength applicators, are used for very superficial small capillary naevi, keratomata, warts, corns, papillomata, and the early stages of rodent ulcer. Exposures of from ninety to 120 minutes are used, with full-strength applicators, when it is desired to produce a definitely destructive reaction, as in the treatment of hypertrophic or deeply ulcerated rodent ulcers, small localized epitheliomata, and pigmented moles. Cavernous naevi, keloids, vicious cicatrices, flat superficial epitheliomata, indolent ulcers, and inflammatory induration of recent origin are treated by half-strength applicators, screened with 0.1 mm. lead, or 0.5 or 1 mm. silver, for thirty to ninety minutes. When it is desired to obtain only the gamma radiation a screen of 2 mm. lead is employed, and the length of the exposure is usually from twenty to forty hours, or even longer.

When tubes of salt or emanation are buried in a tumour a screen of 1 mm. of silver is usually employed, and the length of the exposure is twenty-four hours. A tube should not be buried in a rapidly growing carcinomatous nodule, as it merely increases the necrosis; it should be directed to the periphery of the growth and prolonged screen exposures given, in the hope of limiting spread by stimulating fibrous tissue formation. Mr. Hayward Pinch states that "There appears to be some difference in the response of growths of epiblastic as opposed to those of hypoblastic origin; the former appear to be more favourably influenced by a longer exposure with a weaker dose, the latter by a shorter exposure with a larger dose—for example, 100 mg. for twenty-four hours in the one case, 200 mg. for twelve hours in the other."

Radium Workers.

A person who habitually handles radium or is constantly in contact with radium rays suffers local and systemic effects. After working for a few months with radium apparatus the skin of the fingers becomes roughened and inelastic, and the tactile sense is diminished, but sensation to heat and cold is exaggerated. Later the skin becomes fissured, small corns or warts develop, and the nails become thick and brittle. As the clinical workers are more affected than laboratory workers it is thought probable that the majority of the local effects are due to the "secondary excited" rays. The general symptoms are said to be disproportionate fatigue after a day's work, and after a time a fall in the number of white corpuscles; there is also a diminution in the number of red corpuscles, but at first this is to some extent compensated by an increase in the colour index. Many female workers, it is said, "show a peculiar susceptibility in respect of their menstrual functions. Menorrhagia is first noted, the periods then become irregular, and amenorrhoea results, and remains permanent so long as the worker continues at her employment, though the functions return to normal after a holiday of four or six months' duration."

To prevent local effects workers are required to wear thick leather gloves, and to handle apparatus as far as possible with forceps a foot long. Screens are also used, but it has been found that no nurse or attendant should be allowed to make up or habitually apply apparatus for more than three months; there should then be an interval of rest at least as long. As emanation does not produce secondary radiation for at least half an hour after its preparation it is easier to handle. For the prevention of the general effects care should be taken to keep all radium apparatus in closed leaden boxes 4 to 5 cm. thick. In making up the apparatus a leaden breastplate or screen should be used. Each worker should be given two clear days' holiday a week, to be spent as much as possible in the open air.

Carcinoma.

With the exception of rodent ulcer, to which separate reference is made, no operable cases of malignant disease are treated at the Radium Institute, save in the few instances in which the patient positively refuses operation. In at least 70 per cent. of the cases treated the disease was far advanced, and extensive dissemination was present, so that arrest of the progress of the disease and relief of the attendant symptoms are the utmost that can be expected.

Breast.

Cases of carcinoma of the breast constitute 25 per cent. of all those treated. In the rapidly growing encephaloid type with extensive lymphatic involvement prognosis is invariably bad, but very prolonged screen exposures to the periphery of the growth may occasionally retard the progress of the disease to some slight extent. On the other hand, the atrophic type usually responds favourably to prolonged screened exposures, which have the effect of reinforcing the natural tendency to the production of a curative fibrosis. The prognosis in the various types of cases between these two extremes depends to a great extent upon the history and clinical features; the object of treatment should be to increase the development of fibrous tissue in the hope of constricting the carcinomatous alveoli, causing degeneration of their contents and arresting dissemination by the lymphatics. Half-strength applicators, screened with 1 mm. of silver and applied for twelve to eighteen hours, may induce healing of ulcerated skin over the growth. Small isolated subcutaneous nodules attached to muscles, ribs, clavicle, or sternum, are treated by the insertion of an emanation tube for eighteen to twenty-four hours. Metastatic lesions of the viscera, scalp, or long bones, are treated by prolonged screened exposures which may arrest the progress of the disease, and sometimes cause an actual decrease in the size of the secondary foci.

Uterus.

In the patients with cancer of the uterus received at the Institute the disease has, as a rule, existed for so long and dissemination is so far advanced that little hope of effecting even "apparent cure" can be entertained. In a few border-line cases radium irradiation has been used in the hope of diminishing the amount of existing induration and the fixation of the uterus, so that its removal can be more completely and satisfactorily accomplished. We quote in full the remainder of this section of the report:

It has hitherto been the practice at the Radium Institute strongly to urge immediate operation in cases where such a measure is practicable, but radium treatment appears to exert such a very beneficial effect upon early cases of carcinoma of the cervix that if the patient exhibit any great reluctance to operative interference the latter method of treatment may be adopted.

In cases which are manifestly inoperable the systematic improvement which almost invariably follows upon radium treatment is most striking, and far exceeds that of any other therapeutic measures. Arrest of haemorrhage, lessening of discharge, healing of ulceration, reduction of surrounding infiltration, diminution of the rate of growth, and amelioration of pain are constantly observed, and though the susceptibility of patients varies within very wide limits, some responding much more speedily and completely than others, yet in nearly every instance definite benefit results, and the progress of the disease is greatly retarded.

Several factors must be taken into account when attempting to form a prognosis in the radium treatment of uterine cancer. The disease usually runs a slower course, and dissemination into the pelvic glands is much less active in patients who have passed the climacteric than in those in whom the menopause has not been established. Very young and very corpulent patients also do badly, though this rule is not without its exceptions.

The cases in which the best results may be anticipated are those in which the patients are of 50 years of age and upwards, where there is but little fungation, the vesico-vaginal and recto-vaginal septa are not much involved, and there is no very great amount of peri-uterine induration present. In these instances definite arrest of the progress of the disease is sometimes obtained, the patient remaining apparently well for three, four, or more years. It is not, however, correct to speak of these cases as "cured," as there is always the probability that sooner or later evidence of dissemination will occur, and the disease will be found to be affecting regions far beyond the effective range of radium. Recurrences in the vaginal wall after the operation of hysterectomy, if taken at an early date, often do surprisingly well, their complete disappearance is occasionally brought about, and no recurrences take place.

When the uterus is very firmly fixed, the patient complaining of sacral and pelvic pain radiating into both thighs, infection of the pelvic glands and deep parametric tissues may be regarded as certain, and radium is able to do but little for these patients beyond possibly arresting the disease and slightly diminishing the pain.

When treating cases of cervical carcinoma, if the growth be of the cauliflower or fungating type the removal of as much of the mass as possible by excision or curetting before the treatment is commenced is to be advocated. A tube containing not less than 100 mg. of radium should be employed, the screening should be either 1 mm. of silver or 2 mm. of lead, according to whether the apparatus can be inserted actually within the cervical canal or has to be placed in the vagina in contact with the diseased surface.

The uterine tissues appear to have a greater power of resistance to the radium rays than have the vaginal ones, and the employment of a silver screen in contact with the vaginal wall for a period of more than eighteen hours may quite possibly lead to the formation of a fistula, but with the tube inserted within the cervical canal this contingency does not arise. The exposure should be between twenty and twenty-four hours' duration, and may advantageously be supplemented by the use of a plate containing 100 or more mg. of radium screened with 2 mm. of lead, and applied externally over the fundus. By this means a thorough radiation of the whole diseased area is obtained. The exposures should be repeated at intervals of not less than six weeks.

Circumscribed and indurated nodules of small size in the substance of the cervix may receive, in addition, treatment by the insertion into their substance of tiny emanation tubes of 20 to 30 mg. initial activity, screened with 0.3 mm. of platinum, for from twelve to eighteen hours.

Carcinoma of the body of the uterus is of much less frequent occurrence than cancer of the cervix, and since the prognosis as regards recurrence after hysterectomy is very favourable, operation should always be resorted to if practicable.

If radium treatment be determined upon, a tube of not less than 100 mg., screened with 1 mm. of silver, should be inserted into the uterine cavity, supplemented if possible with a plate of equal strength, screened with 2 mm. of lead, and applied over the fundus. Great caution must be observed in making the intrauterine application, the uterine walls being extremely friable when infiltrated with carcinoma, and readily perforated if undue force be used.

Tongue, Fauces, and Oesophagus.

Cases of carcinoma of the tongue, palate, and buccal mucous membranes only come under treatment when all surgical measures have been exhausted and recurrence is widespread, producing constant and severe pain. The results of treatment in such cases are unsatisfactory. Upon those in which acute ulceration predominates radium has very little effect, although occasionally exposures of one to two hours' duration to tube apparatus in contact with the ulcerated surface on four or five successive days tends to arrest the ulceration and sometimes to induce very transient repair. Cases in which induration predominates are more amenable; when the induration is circumscribed, or in the form of small non-ulcerated nodules in the tongue, the floor of the mouth, the palate or jaws, the insertion of a small powerful emanation tube, screened with 0.3 mm. of platinum, for five to six hours, will bring about their disappearance. The probability of lymphatic infection may be diminished by the prophylactic radiation of the cervical and submental glands. Exuberant papillated epitheliomatous growths of the mucous membrane of the mouth, with little submucous invasion, if treated at an early stage by burying powerful emanation tubes, often clear up completely and then seldom recur. With old lymphatic infection and masses of indurated glands prolonged exposures, with heavily screened apparatus, are often of considerable use in diminishing the size of the glands and preventing implication of the skin covering them. In some cases the neuralgic pains are distinctly relieved after prolonged irradiation, but this result cannot be assured in any particular cases. Definite but only temporary relief may sometimes be obtained in cancer of the oesophagus by the use of radium. It must be applied by a laryngologist skilled in oesophagoscopy.

Rectum.

The form of carcinoma of the rectum which does best is the annular, vascular exuberant type at the upper half of the rectal ampulla. If much ulceration be present colostomy should be performed before radium treatment is undertaken, as the passage of faeces over an ulcerated surface, made more tender by a radium reaction, produces very severe pain. As the healthy rectal mucous membrane is very susceptible to radium rays great care must be taken to protect it during the treatment. During the year some cases received injections of cuprase between the radium exposures; 5 c.cm. of the solution was injected intramuscularly every fourth day until 60 c.cm. had been injected. Mr. Pinch expresses no positive opinion, but the results have, he says, been such as to justify a continuation of the combined treatment.

Bladder and Prostate.

The treatment of inoperable carcinoma of the bladder by radium sometimes gives extremely good results, especially in women in whom, in addition to the radium tube in the bladder, a screened tube is placed in the vagina. Carcinoma of the prostate, limited to one lobe, the enlargement of the gland not being very great, is treated by burying a silver screened emanation tube within the carcinomatous mass. If the patient objects to this, the method of cross radiation with a tube in the urethra and a plate over the perineum has sometimes been found to produce definite improvement and prolongation of life for perhaps two or three years.

Stomach and Intestines.

In inoperable cases of carcinoma of the stomach and intestines prolonged exposures with heavily screened

powerful applicators sometimes diminish the pain and arrest the progress of the disease.

Rodent Ulcer.

This is the only form of malignant disease in which it is at present justifiable to use radium therapy in preference to any other method. The results are, of course, more satisfactory in early cases. Rodent ulcers previously treated repeatedly with caustics, scraping, CO_2 snow, or x rays, must be very carefully handled, or a destructive reaction far exceeding what is desired may occur. If rodent ulcer has invaded the bony tissues radium has no power to cure; therefore the affected portion of bone should be excised before radium treatment is commenced.

Sarcoma.

The response of sarcomata to radium treatment varies; the periosteal variety usually responds better than the endosteal, and if it does respond, the tendency to recurrence or dissemination is greatly inhibited, so that the patient may remain "apparently cured" for many years. Prognosis is better in a spindle-celled sarcoma than in the small round-celled variety; the large round-celled type appears to occupy an intermediate position. The result in cases of myeloid sarcoma (now named "myeloma") is uncertain; in about half the cases radium produces no effect, but in the other half the result is gratifying. Of sarcomata affecting the nasopharynx Mr. Pinch says:

> These are extremely susceptible to radium, and often completely disappear within a month of the treatment. The lympho-sarcomata attacking the cervical and mediastinal glands usually show a very rapid and pronounced improvement, the improvement persisting for four or six months. In most cases some recrudescence of the condition is then noted, necessitating further exposures, which may have to be repeated at prolonged intervals for three or four years. A time is, however, ultimately reached when the response to radium treatment becomes negligible, and the disease then rapidly assumes the mastery.

For the treatment of sarcomata massive doses must be given, and whenever practicable silver-screened tubes should be buried in the centre of the mass.

Non-Malignant Conditions.

Uterine Fibroids.

The relief which follows the treatment of uterine fibroids with radium is stated to be definite and striking. The reduction in the size of the tumour may not be very great, but the flow is gradually checked and may return to normal or may cease altogether for three or four months, or longer. It may be necessary to repeat the treatment after three or four months, and if it is given on three or four occasions the probability of premature menopause must be made clear to the patient. Chronic metritis also responds to radium therapy.

Naevi.

The best results in cavernous naevi are obtained if the infant is seen before other treatment has been adopted. Radium treatment requires great patience on the part both of the operator and parents. When a cure has been effected there appears to be no tendency to recurrence. The results in capillary naevi vary very greatly. If complete blanching can be obtained by a moderate degree of pressure the result will probably be good; if not, no more than a diminution in the intensity of the colour is to be expected. Owing to liability at a later stage to telangiectasis or pigmentation the child should be seen at fairly frequent intervals for some time.

Warts, Papillomata, and Keloids.

The majority of corns, warts, papillomata, and keratomata can be removed by short exposures. With a correct dose exfoliation of the growth, with little accompanying inflammation, occurs three to four weeks after the application. Radium treatment of keloids and vicious cicatrices generally brings about great improvement, if not complete disappearance.

Lupus Erythematosus.

This obstinate and disfiguring disease is frequently very greatly improved by radium therapy, though recurrences tend to take place after varying intervals.

Tuberculosis.

In the treatment of lupus vulgaris the Finsen light is usually to be preferred to radium, but it will, not infrequently, give excellent results in cases that prove refractory to the light. Lupus in a position inaccessible to Finsen light, as in the mucous membrane of the nose, is suitable for radium therapy; cross radiation is employed. Lupus of the palate and fauces may often be very greatly improved by radium. Radium treatment of tuberculous adenitis, if adopted at an early stage before numerous glands are affected and caseation has occurred, may with some confidence be expected to give favourable results.

Skin Diseases.

Many chronic forms of superficial skin diseases, such as lichenification, chronic eczema, leucoplakia of the first degree, and pruritus, are favourably influenced; so also is psoriasis, though it shows a strong tendency to recur.

Arthritis Deformans.

Infective arthritis of comparatively recent origin in patients under 40, accompanied by peri-articular rather than intra-articular changes, is often greatly benefited by the internal administration daily of 500 c.cm. of a solution of radium emanation of a strength of 1.5 millicuries to the litre. When one joint only is affected and the changes are intra-articular, with osteophytic growths or pathological changes in the bones or cartilages, little good is to be expected.

Chemico-Physical Laboratory.

Mr. W. L. S. Alton, F.I.C., director of the laboratory, has had the help of Mr. J. F. Clarke, M.Sc., who was appointed in June. The number of emanation tubes and applicators prepared was 771, giving an activity in terms of radium bromide equal to 66.04 grams. A large quantity of the radio-active water, referred to in connexion with arthritis deformans, was prepared. The number of radium applicators made included a set for a hospital at Reykjavik; others were made for a medical man in New Zealand, and a complete installation for making emanation applicators was supplied to a clinic in Paris. Mr. Clarke carried out measurements of the amount of secondary radiation emitted by compound lead-aluminium screens. Mr. Austin refers to the precautions that must be taken to protect the workers with radium; they include powerful fans for ventilation, as it is inadvisable to breathe air containing emanation, and accidents to emanation tubes occasionally occur.

Research Department.

Dr. J. C. Mottram, director of this department, reports that it was opened in May, 1919, but that considerable delay occurred in fitting up the laboratory. He reported to the Electro-Therapeutic Section of the Royal Society of Medicine an investigation into the leucopenia produced by radiation; he had also made a report to the same section on the examination of patients in ultra-violet radiation, after the manner devised by Professor R. W. Wood (Baltimore). Dr. Mottram describes it as follows:

> Dr. Wood produced a glass which, whilst allowing ultra-violet radiation to pass, is opaque to light. Using an arc lamp, such as a mercury vapour lamp, one is thus able to obtain a beam of ultra-violet radiation. On examining patients in the beam a number of striking appearances are seen. Briefly, the skin is seen to glow with a violet light; but certain areas, especially on the face, are not fluorescent, and appear as black spots. This spotty appearance varies much, some individuals are almost free from spots, whilst others are thickly covered. Similar differences are to be seen in photographs taken in a particular manner with an arc lamp, and it has been observed at the institute that patients showing a spotty appearance in these photographs are more susceptible to radium radiation than the relatively unspotted. As the spots in the two cases (that is, photographically obtained and seen in ultra-violet illumination) are almost certainly the same, it follows that examination in ultra-violet radiation will probably give the radiologist a means of at once estimating the susceptibility of his patient. Other striking appearances are seen besides the dark spots. Scattered over the face are numerous minute brightly fluorescent spots, having the appearance of stars. The teeth are very brilliantly fluorescent, less so the nails. The eyes may be likened to the eyes of a boiled fish—this being due to fluorescence of the lens. Whether these and other appearances will be of value in radium treatment remains to be seen.

British Medical Journal.

SATURDAY, MAY 8TH, 1920.

ENDOCRINOLOGY AS AN EXACT SCIENCE.

THE speculative philosopher is always with us, and during the last few years has found his chief medical field of activity in the ductless glands and their secretions. Here he has been extremely busy, with the result that the number of such "glands" has grown almost equal to the number of different tissues in the body; while the number of internal secretions and hormones postulated has become no less enormous. Indeed, it may be said, not unfairly, that with many writers who deal with the subject the only proof of the existence of a hormone nowadays required is that it should seem to be demanded by theory. As an example may be quoted the "libidogenous hormone," to which Higier attributes the existence of libido, libido being the term to indicate the instincts of self-preservation and race propagation. The libidogenous hormone, we read, is secreted "in all probability" by the interstitial substance of the testicle; the plain man may perhaps be excused if he prefers to regard it as a typical secretion of balderdash. Such loose fancies as those leading to the invention of "libidogenous hormones" and the like do nothing to aid in the advancement of science.

Professor Gley has recently collected four lectures,[1] delivered at the end of the year 1917 at Barcelona, and they form a useful corrective of the tendency. The whole subject is one which Professor Gley may be said to have made peculiarly his own during the last thirty years, and in these brief, masterly, and well-poised deliverances will be found a summary of present knowledge of the internal secretions. He would distinguish two classes—hormones proper, and harmozones, a word formed from ἁρμόζω (to regulate or direct); the word is intended to be non-committal, for the nature of the substances is unknown, though they must be presumed to exist in order to account for the known action of certain organs on the growth and nutrition of certain others at a distance. The most striking example is afforded by the thyroid, which influences the formation of the skeleton, the growth of the genital glands, and the development of the higher cerebral functions. Another instance is afforded by the interstitial substance of the testicle, a gland producing an internal secretion which determines the development of the special characters of the skeleton, and of the skin and cutaneous appendages proper to the male; further, it would appear that there are formed by the interstitial gland and the pituitary body not only substances which stimulate growth — harmozones — but others, called chalones[2] by Sir E. Sharpey Schafer, which control growth and limit its extent. Professor Gley traces the whole idea of internal secretions back to Claude Bernard's discovery of hepatic glycogenesis in 1855. In the second lecture Professor Gley shows that three criteria—histological, chemical, and physiological—must be satisfied before a gland can be passed as endocrine; and that a hormone cannot be recognized as such until it has been proved to have a definite physiological action and has been found both in the venous blood leaving the gland that secretes it and in the general arterial blood. The method of looking for hormones or internal secretions by the injection of glandular extracts is, he holds, inadequate, and he advances evidence to prove that it has often proved fallacious. Thus recent work on the suprarenal glands tends to prove that the suprarenal cortex and its secretion, adrenalin, have not the physiological importance usually attributed to them. The medulla of the gland may be the essential part; the cortex may be concerned mainly in the elaboration of lipoid substances and cholesterin. Professor Gley maintains that in the past experimental physiologists have often, for want of clear thinking and the neglect of suitable experimental methods, fallen into the error of assuming that the constant physiological action of an organ of internal secretion is identical with that of a large quantity of the extract of an organ suddenly thrown into the circulation. A line of argument often employed here is one that would lead an experimenter using cascara and observing its customary effects to conclude that constipation is an expression of hypocascarism.

Professor Gley admits that the experiments of Bayliss and Starling on secretin fulfil all the conditions he requires; they show conclusively that this substance is produced by the mucous membrane of the duodenum when acted upon by hydrochloric acid, and is carried by the blood to the pancreas, which is stimulated to activity; he recognizes also that the existence of a galactogenic hormone producing lactation and of a testicular harmozone may be taken as proved, though their existence cannot yet be regarded as certain. Much more uncertain is the secretion of hormones and harmozones by the hypophysis, the pancreas, the liver, the thyroid, the thymus, the testis, or the corpus luteum. Here is a fruitful country for further study, and Professor Gley points out the road that experimental physiologists must follow and the pitfalls into which so many of their predecessors have fallen. In his fourth lecture he describes the revolution in biological science produced by the notion and investigation of internal secretions.

The study of these lectures may be warmly recommended to medical men and others interested (as indeed we all are) in the progress of knowledge of the endocrine glands. It is a matter of great practical importance; it is also of great theoretical interest, but has here the weakness of lending itself too readily to hasty and speculative misinterpretation. Professor Gley may be accepted as an authoritative guide in all these matters both of fact and fancy, and his lectures will help to raise endocrinology from the slough of guesswork and hypothesis into which it has been precipitated by the enthusiasm of some—by no means all—of its exponents.

[1] *Quatre leçons sur les sécrétions internes.* Par E. Gley, Professeur au Collège de France, etc. Paris: J. B. Baillière et Fils. 1920. (Post 8vo, pp. 154. Fr. 6.)

[2] χαλάω = to check. *The Endocrine Organs.* London. 1916.

RADIUM THERAPY.

THE report for 1919, by Mr. Hayward Pinch, on the London Radium Institute, is a document of more than ordinary interest and well worthy of study, not only by those directly concerned with the administration of radium, but by members of the profession generally, since in it an attempt is made to define some basis for prognosis. Many difficulties in this respect remain, but Mr. Pinch has succeeded in indicating some of the factors, and we think that anyone who will read the full account published elsewhere in this issue (p. 640) will be convinced that he is actuated by a desire to give an impartial opinion.

He is to be congratulated upon the facility he shows in conveying to readers so much in words so few and so well chosen. Whilst on the whole the record of the year's work only emphasizes the results of previous years, three points appear worthy of special attention. In the first place, and speaking somewhat generally, there appears to be a tendency to emphasize the importance of using larger quantities of radium for the treatment of definitely malignant conditions. A second point of importance relates to the results he has obtained in the treatment of cancer of the uterus, and it is evident that increasing experience is suggesting that radium treatment of this condition should no longer be confined to so-called inoperable cases. For many years past radium therapy has been held to be justifiable only in cases in which operation was considered to be contraindicated; and although many results were obtained, surprising, perhaps, not so much from the point of view of cure as from that of amelioration of symptoms and the prolongation of life, it was not thought reasonable to apply radium to operable cases. More modern methods of dosage, together with a better appreciation of dosage and its effects, are undoubtedly pointing in the direction of radium therapy in earlier cases—even in those which are operable. A careful consideration of the part of this report dealing with uterine cases should be recommended to those whose special work brings them in contact with numbers of these unfortunates.

The third point to which special attention should be given is the effects of radium on those who have to prepare the various applicators, and who spend their lives, so to speak, in an atmosphere of radium. There is a warning as to the extreme care it is necessary to exercise. Apart altogether from the direct effects upon fingers and hands due to handling emanation tubes and applicators, there are the constitutional effects, due no doubt to prolonged radiation by gamma rays. It is found that after a certain time definite blood changes make their appearance, the white corpuscles falling well below 4,000 in the cubic millimetre, and at the same time the red corpuscles diminish in number. The same thing has been noticed amongst workers in *x*-ray departments, and it can hardly be doubted that the more general use of Coolidge tubes has increased these dangers. It is laid down in the report of the Radium Institute that no nurse or attendant habitually applying apparatus should work continuously for more than three months, and that this period should be followed by a change of occupation or a rest for an equal period of time; and, moreover, that all these workers should have at least two clear holidays a week to be spent in the open air. In the past not sufficient attention has been paid to the constitutional effects produced in workers with radium and *x* rays; in the case of the latter especially, who very often have to work for long hours in small, badly ventilated rooms, with inadequately protected apparatus, some drastic changes in the conditions of work will have to be made. Hospital authorities in the future must be prepared to deal more generously with the staffs of these special departments in regard to hours of work, holidays, and times for out-of-door life.

THE ROYAL ACADEMY.

THE one hundred and fifty-second exhibition of the Royal Academy of Arts, which opened to the public on Monday last, provides the usual medley of colour and gives the art critic his usual opportunity for blaming the academicians for their neglect of certain modern schools of painting. The ordinary sightseer, however, bent more upon enjoyment than criticism, will find much to interest him and a good deal to admire. The old bad practice of filling the walls with pictures from floor to ceiling seems to have been abandoned finally; almost every picture is now, so to speak, hung on the line and can be studied without fatigue. The first thing to attract notice in Gallery I is the presentation portrait of Sir Clifford Allbutt, painted last November by Sir William Orpen, R.A. The strength and dignity of the portraiture, the fine feeling for character, and the masterly handling of form and colour, make this picture worthy of the artist and of his subject. The first glance shows that it has been painted with real enjoyment. The expression is a little stern, but not severe, and all who know the doyen of our profession will say that the hands are as true to life as is the countenance. The inscription runs: "Sir Clifford Allbutt, K.C.B., M.D., F.R.S., Regius Professor of Physic in the University of Cambridge; President of the British Medical Association. Presented to him by his Profession, 1920." In the room set apart for drawings, engravings and etchings, is hung an unfinished proof of Mr. H. Macbeth-Raeburn's striking and sympathetic mezzotint engraving of the portrait; to be seen at its best it should be studied at not too great a distance. Other medical pictures in this year's Academy are an unmistakable profile in oils of Sir Charles Ballance, by W. W. Ouless, R.A.; a small but decorative painting of Dr. William Hunter in doctor's robes, by Eleanor Fortescue-Brickdale; Hugh Riviere's open-air study of Mr. and Mrs. Eardley Holland; and a spirited portrait of Surgeon Captain P. W. Bassett-Smith, R.N., by C. Ross Burnett, whose eye may perhaps have resented the magenta facings of the F.R.C.S. gown against the scarlet and gold of the naval rank badges. This is not the place to discuss the features of the exhibition in general, but we may note the curious effect upon one artist of painting the portrait of a gentleman with jaundice—a fine but distressing picture that speaks eloquently of the later stages of disease. Another portrait by the same painter has a slight icteric tinge, and a fainter echo of xanthocroic vision may be perceived in the nude figure dominating his third exhibit. If for nothing else, the 1920 Academy would be noteworthy for Walter Bayes' "Oratio Obliqua" and for Orpen's pictures; but in many respects it is well above the average of recent years.

THE ANNUAL DINNER AT CAMBRIDGE.

THE Master and Fellows of St. John's College, Cambridge, have very kindly invited members of the Association to dine in the College Hall at 8 p.m. on Thursday, July 1st, as guests of the College. As the seating accommodation is limited to 200 it will be necessary to ballot for tickets. Members who would wish to accept this invitation should therefore send in their names to the Local Secretaries, British Medical Association, The Medical Schools, Cambridge, before June 25th.

SECTIONS AT THE CAMBRIDGE MEETING.

THE following programme has been arranged for the Section of Surgery, which will meet under the presidency of Sir George Makins, during the annual meeting at Cambridge next month. On Wednesday, June 30th, a discussion on the surgical treatment of gastric ulcer will be opened by Sir Berkeley Moynihan and Dr. Charles H. Mayo. On July 1st a discussion on the surgical treatment of cancer of the rectum will be opened by Mr. W. Ernest Miles and Mr. Grey Turner. On July 2nd a discussion on the end-results of injuries of the peripheral nerves treated by operation will be opened by Sir William Thorburn and Mr. Percy Sargent. The discussions will begin at 10 a.m. each day and will end at noon. The following papers will be read at 12 o'clock: June 30th, Mr. Frank Kidd, treatment of calculi in the lower third of the ureter; July 1st, Lieut.-Colonel R. H. Elliot, diagnosis of glaucoma; July 2nd, Mr. Herbert Tilley, inflammatory lesions of the nasal accessory sinuses from the standpoint of the general

physician and surgeon. Demonstrations will be given in the afternoons by Major Meurice Sinclair on the treatment of fractures; by Mr. H. D. Gillies and Mr. Percival Cole on the plastic surgery of the face; by Mr. Tilley on endoscopy of the lower air passages and gullet; and by Mr. Arthur Cooke and Mr. Adrian Stokes, on the technique of blood transfusion. The Medical Education Section will meet on Thursday, July 1st, from 10 a.m. to 1 p.m., under the presidency of Sir George Newman, who will give an address. A discussion on Preliminary Scientific Education in the Medical Curriculum, will be opened by Professors S. J. Hickson, Arthur Keith, Ernest Rutherford, J. Lorrain Smith, and A. Smithells, who will deal respectively with the subject from the standpoints of biology, anatomy, physics, pathology, and chemistry. The Naval and Military Section will meet on Wednesday, June 30th, at 10 o'clock, under the presidency of Colonel Joseph Griffiths, who will introduce a discussion on the Army Medical Service in its relation to the education and training of newly qualified medical men. It is hoped that the importance of this subject to the profession generally will secure an adequate discussion; those desirous of taking part are requested to communicate with the president. At 2.30 p.m. Sir G. Sims Woodhead will give a demonstration on the purification of drinking water in the field. Further demonstrations for the afternoon are invited; early notice should be given.

PUBLIC OPINION AND PREVENTIVE MEDICINE.

THE annual Lady Priestley Memorial lecture of the National Health Society was delivered at the house of the Royal Society of Medicine by Sir George Newman, K.C.B., Chief Medical Officer of the Ministry of Health, on April 22nd. Sir James Crichton-Browne, F.R.S., Chairman of the National Health Society, presided, and H.R.H. Princess Christian, the president, attended the lecture and presented diplomas to the Society's students. The subject of the lecture was "The place of public opinion in preventive medicine." Sir George Newman said that the increase of physiological and pathological knowledge which had occurred during the last fifty years showed that disease resulted from definite causes which in a large and increasing measure were controllable. Public and personal health had become purchasable, and the business of preventive medicine was to make human life better, larger, and more useful, and to prolong our days. In spite of the improvement in national health shown in the mortality tables, three important sources of evidence proved that the English people suffered from very defective physique. Ten years of medical inspection in elementary schools had shown that one million children were so defective as to be unable to derive reasonable benefit from their schooling; the insurance returns for 1914-16 showed that more than half the insured persons in England and Wales received medical treatment every year; and in 1917-18, of the 2,000,000 recruits examined, only 36 per cent. were in full health and strength. The coming of the Ministry of Health would lead to new attacks on the strongholds of disease, but "as the science of Government becomes more representative of the aspirations of the people as a whole, so also its practice becomes more dependent upon their education and equipment; only an educated people is an effective and healthy people." Not only technical instruction in hygiene was required, but also an informed humanism which welcomed and understood the growth of medicine and accepted its results boldly and gladly on behalf of all mankind. Much of the impaired health of the country was due to public ignorance and neglect of the proper way in which to secure adequate nutrition, fresh air, and exercise. Economic conditions permitted, as a rule, the purchase of sufficient food, but among the great mass of workers there was ignorance of the right food to buy and how to cook it. Lack of knowledge and dominance of bad habit prevented also the use of the means for adequate ventilation in houses, schools, and factories. A complete national scheme for the provision of facilities for all forms of healthy physical recreation was necessary. The need for exercise was common to both sexes, and if music and dancing, golf, hockey, and tennis were good for any young woman, they were good for all. By maintaining a clean mouth and clear breathing passages, and by abstinence from spitting, sneezing, coughing, or shouting at others, people might go a long way towards the prevention of pulmonary tuberculosis, influenza, poliomyelitis, and cerebro-spinal fever; infantile mortality, as well as the incidence of dyspepsia, septic wounds, and other groups of diseased conditions, could be lessened by the diffusion of some simple knowledge of their causation. The whole child and adolescent population of all social grades and classes should be given a knowledge of personal health and an experience of the practice of hygiene—the habit of healthy living. A new opportunity for such teaching occurred in the continuation schools, attendance at which was now compulsory. All doctors, nurses, midwives, health visitors, sanitary inspectors, and welfare workers should be missionaries of hygiene. It was impossible to over-estimate the value of the admirable work done by voluntary health societies, or the significance of the newspaper press as an educative agency. Lastly, the Government itself could not be absolved from its share of responsibility in begetting a wise public opinion in health matters.

THE VIRUS OF EPIDEMIC ENCEPHALITIS.

STRAUSS, HIRSHFELD, and LOEWE just a year ago published a report[1] of some experiments in the pathological laboratory of Mount Sinai Hospital, New York City. They stated that the intracerebral injection of an emulsion of brain tissue in salt solution from a fatal case of epidemic encephalitis produced in monkeys lesions resembling closely those in man; that the inoculation of washings from the nasopharynx in a case of epidemic encephalitis filtered through a Berkefeld N filter produced the disease, and that it could be conveyed to another monkey. Another series of experiments published later[2] showed that the filtrable virus obtained from the nasopharyngeal mucous membrane of fatal cases of epidemic encephalitis produced lesions similar to those found in the human brain; it had been carried through four generations of rabbits, transmitted to monkeys in the fifth generation, and then brought back to rabbits. They stated that the virus could be recovered from the nasopharynx of animals inoculated intracranially. About half their rabbits showed natural immunity, and one monkey afforded evidence of acquired immunity. They also stated that the cerebro-spinal fluid from a fatal case of encephalitis caused the disease in rabbits. Mackintosh and Turnbull[3] throw doubt on the results of the experiments in New York; they suggest that some other virus must have been present, partly on the ground that gross haemorrhages which have not occurred in cases of human lethargic encephalitis were observed. The New York observers, however, in their second paper rejected this suggestion in anticipation, stating that they had found typical microscopic lesions at a distance from the haemorrhage, and also that one of their strains, which at the earlier inoculations manifested a tendency to produce haemorrhage, at subsequent inoculations yielded the more varied lesions found in human brains. The New York observations have been confirmed by Levaditi and Harvier[4]; they state that the virus is easily transmitted from rabbit to rabbit, that it can be preserved in glycerin, that it passes easily through Chamberland filters (1 and 3), and that by a certain number of passages through the rabbit its virulence for the monkey appears

[1] *New York Medical Journal*, May 3rd, 1919.
[2] *Journal of Infectious Diseases*, 1919, p. 378.
[3] *British Journal of Experimental Pathology*, April, 1920.
[4] *Bulletin de l'Académie de Médecine*. T. 83, p. 365 (April 20th).

to be increased, and it becomes virulent also for the guinea-pig. They consider that its behaviour towards animals shows that it is quite distinct from the virus of epidemic poliomyelitis. In a note on the organism published last October[5] Loewe and Strauss stated that cultivation, whether aërobic or anaërobic, of the material on ordinary laboratory media gave negative results, but by using the Noguchi method they obtained a growth which was manifested on the fifth to the seventh day by clouding of the medium in certain tubes; when recultivated on ordinary laboratory media it was proved to be free from contamination. The growth in the solid medium appeared as minute colonies. In smears from them stained with Giemsa solution or methylene blue after preliminary fixation, small globular purplish or bluish objects were seen, sometimes singly, sometimes in pairs, sometimes in chains or clumps. This organism resembled that described by Flexner and Noguchi in poliomyelitis, remained virulent in cultures for a period of at least six weeks, and had been carried to the twelfth generation.

GOVERNMENT POLICY AS TO HOSPITALS.

OUR Lobby Correspondent writes: Statements of a somewhat sensational character in London daily papers have created some misapprehension as to the attitude of the Government in regard to the problem of securing adequate hospital accommodation for the community. When the Ministry of Health Bill was introduced it was stated officially that after it came into operation there would be further legislation to reform the Poor Law system, and since then Dr. Addison has intimated that he would in the course of time introduce a Health Services Bill. This announcement and statements as to the lack of sufficient hospital accommodation in some areas led to questions as to the Government's intentions in regard to hospital services. Dr. Addison replied at various times that he could not put forward any general policy until he had before him the report of the Medical Consultative Council, which on its formation last autumn was instructed "to consider and make recommendations as to the schemes requisite for the systematized provision of such form of medical and allied services as should in the opinion of the Council be made available for the inhabitants of a given area." This report, it appears, has been completed and is in the hands of the Minister of Health, who meanwhile had received an application from Bradford for sanction to carry out an agreement between the corporation of that city and the board of guardians for the utilization of St. Luke's Poor Law Hospital as a municipal general hospital to supply the deficiency in existing accommodation. The proposal was sanctioned by the Ministry of Health, and on April 14th, in reply to a question as to whether this was indicative of a new policy, Dr. Addison said that, pending further legislation which was being prepared, he would deal on its merits with each application for sanction for a hospital to be provided by a local authority. That is really where the matter stands. There is good ground for saying that the Minister of Health does not intend to introduce a bill specially to deal with the provision of hospitals. But he does propose to include in a general bill provision to enable counties and county boroughs to establish hospitals if they think fit, and if they are able to satisfy the Ministry in various respects. The legislation will be optional, not compulsory. The idea probably will be to make or take units of area and to sanction the setting up of such additional accommodation as may be needed to make good deficiencies. Some hope has been expressed by Dr. Addison that a certain amount of progress might be made this session with the measure he proposes to introduce, but the expectation that time will allow such a bill to have the attention of Parliament within the present year is faint. It is even doubtful whether there will be an autumn session, and unless there is it can hardly be in contemplation to proceed with a Health Services Bill.

[5] *Journal of the American Medical Association*, vol. lxxiii, p. 1056.

OPHTHALMOLOGY AND THE PUBLIC.

THE report of the Council of British Ophthalmologists on the work it has done since it was founded two years ago shows that it has rendered very useful services. The Council has met on nineteen occasions to consider subjects thrashed out for it by committees consisting of London and provincial ophthalmologists with, when it seemed desirable, the help of others possessing special knowledge and experience. Two reports dealt with education; the recommendations of the one, on the need for improved training of medical students in the subject, was not accepted by the General Medical Council; but the other, on the need for a higher qualification in ophthalmology, has been fruitful; Oxford instituted such a diploma some time ago, and we publish elsewhere particulars of the regulations for the diploma in ophthalmic medicine and surgery to be granted by the Royal Colleges in England. The conclusions of a report on the vision of men engaged in motor road transport was accepted by the leaders of the men concerned, and has been adopted by the police authorities in London and elsewhere. Members of the council have served on the London County Council Committee dealing with the lighting of cinemas and eye strain. Committees have been appointed to consider the standardization of test types and the notation of cylinder axes, and a report has been issued on the standard illumination of tests of visual acuity. A committee has also been appointed to consider the question of sight testing by opticians. Two representatives of the council have been appointed to serve on the Visual Optics Subcommittee of the Advisory Committee on Technical Optics. The council is prepared to advise on any questions of ophthalmological interest arising in connexion with national industries or public services, and the spirit in which its work is done is evidenced by the fact that its expenses have been defrayed by its members.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THE annual dinner of the West London Medico-Chirurgical Society was held at the Hotel Great Central on April 29th, with the President, Dr. Herbert Chambers, in the chair. After the loyal toasts has been honoured, Sir Robert Armstrong-Jones, C.B.E., proposed the Imperial Forces, paying a warm tribute to all those who had given their services on behalf of country and the Empire. In their replies, Surgeon Rear Admiral Sir Robert Hill, K.C.M.G., Medical Director-General R.N., and Lieut.-General Sir John Goodwin, K.C.B., D.G., A.M.S., expressed the gratitude and appreciation of all ranks of the regular forces for the invaluable aid given to them by the civilian medical profession. Each Director-General spoke also of the debt owed by very many of his officers to the excellent post-graduate courses at the West London Hospital. The toast of prosperity to the West London Medico-Chirurgical Society was proposed by Sir William Hale-White, K.B.E., who in an interesting speech mentioned some of the leaders of the medical profession who had served as presidents of the Society or as Cavendish Lecturers; and he ended, as he began, by complimenting the Society upon the vigour and enthusiasm with which it maintained its activities. The President, in acknowledging the toast gave an outline of the year's work and foreshadowed an early increase in the very modest subscription of 5s. a year. He then announced that the Society's Triennial Gold Medals, founded by Dr. Phineas Abrahams, had been awarded to Mr. G. E. Gask, C.M.G., D.S.O., and Dr. T. R. Elliott, C.B.E., D.S.O., in recognition of their signal services during the war in connexion with penetrating wounds of the thorax. He then handed one medal to Mr. Gask, explaining that the presentation to Dr. Elliott must be deferred until his return from abroad. Mr. Gask

was very warmly cheered on rising to acknowledge the award. On behalf of his colleague and himself he said that they wished it to be clearly understood that they claimed only a share in the great advances made during the war in thoracic surgery; their fellow worker, Pierre Duval of the French Army, by working along parallel lines, had reached similar conclusions with regard to the indications for operating and the method to be followed. He preferred to regard the award as including recognition of many colleagues whose work had helped to bring about success, including the administrative heads of the regular R.A.M.C. for their constant and open-handed support. The health of Kindred Societies and Guests was proposed by the Mayor of Kensington, Dr. A. J. Rice-Oxley, C.B.E., and responded to by Mr. V. Warren Low, C.B., President of the Medical Society of London, and Dr. Leonard Williams. A successful evening was brought to a close with the toast of The Chairman, proposed by Sir D'Arcy Power, K.B.E., and briefly acknowledged by Dr. Chambers.

DR. WILLIAM RUSSELL will give the George Alexander Gibson Memorial Lectures before the Royal College of Physicians of Edinburgh on Monday and Wednesday next, May 10th and 12th, at 5 p.m. The subject of the lectures is the sphygmometer in practical medicine.

Medical Notes in Parliament.

Medical Men and the Motor Car Tax.

IN the course of the debate in Committee of Ways and Means on the Budget, on April 27th, Sir Eric Geddes (Minister of Transport) said that the effect of the proposed change in the taxation of motors would be that the more a man used his car the less would the tax hit him. The car owner who used his car only for week ends and who did not use it regularly like the doctor was the man who was worse hit; but he was not badly hit. In the letters which the Ministry had received from two large central selling corporations it was stated that they were giving 7d. reduction in petrol, as soon as the 6d. tax came off; and thus those two very deserving users of motor cars—the doctor and the veterinary surgeon—would get an advantage which was not shown in the statement at all.

Dr. McDonald made a strong appeal on behalf of medical men throughout the country. He said that the Medical Committee of members of that House had met a strong deputation of the British Medical Association, which had urged them to point out that medical men had hitherto enjoyed a rebate. With the increase in taxation of motor cars now taking place many medical men in the country districts would be very hardly hit indeed. Those who had hitherto paid £3 3s. would be called on for £20. He asked that medical men should be allowed a rebate of half the tax as in the past.

Dr. Murray said that under the present regulations medical men were allowed a rebate on the petrol tax—not as a special favour to the profession, but for the reason that the medical man had to use his car for very necessary work. He believed that medical men generally would have preferred that the duty on petrol should have been retained, because they had some justification for feeling that if abolished, the advantage would go ultimately into the pockets of petrol proprietors. If the Minister of Transport stuck to the tax on power rather than on petrol, he ought to apply to medical men under the new regulations the same principle as applied to them formerly. Otherwise they would be very hardly hit. They would also suffer, because in some parts of the country they had to keep two cars, as they could not afford to wait if their ordinary car broke down until it could be repaired. He suggested, therefore, that the tax should apply to one car only, provided there was reasonable ground for thinking that only one car was used at a time. He asked the Minister to bear in mind also that in hilly districts very high power cars must be employed. He had seen many so-called hills in his part of the country which in Scotland would be termed gentle undulations, suited probably for exercise by people suffering from heart disease.

Sir Eric Geddes did not reply, and the resolution was agreed to. The matter will come up again at a later stage. The deputation from the British Medical Association to the Ministry of Transport is described in the SUPPLEMENT.

Departmental Inquiry on "Shell Shock."

Lord Southborough in the House of Lords, on April 28th, called attention to the different types of hysteria and traumatic neuroses, commonly called "shell shock," and to move for an inquiry, either by select or departmental committee, into the expert knowledge derived by the army medical authorities and the medical profession, with the object of recording for use in time to come the experiences of the war, and to advise whether, by military education or otherwise, some scientific methods of dealing with such cases could be devised.

Lord Southborough said that he was inclined to think that what in this war had commonly been called "shell shock" had occurred in previous wars, and that amongst its victims were many whose conditions were never properly understood and who suffered the death penalty. There was a fairly general consensus of opinion here, in France, and in America, that varying and differing types of hysteria or traumatic neurosis were common in civil life, well understood by medical practitioners and frequently met with after railway and other violent accidents.

If it was a fact that a true identification of the disorder was wanting in the early months of the war, then he feared that through inadvertence and want of knowledge dreadful things might have happened to unfortunate men who had, in fact, become irresponsible for their actions. It was clearly not long, however, before our army medical authorities, in common with the French, fully realized the gravity of the disorder. They appreciated that any one who understood hysteria would be well on his way to understand shell shock. The wonder was that the vast number of boys taken from civil life stood firm and sound in mind and body to the end. There was evidence, however, that shell shock or hysteria was not confined to the untrained soldier. Seasoned soldiers, marked for bravery, were often attacked. This meant, no doubt, that in some cases, after wear and tear, the nervous system refused to do more. It also probably meant that the seasoned soldier had already suffered from shell shock, had been invalided home, and then returned to the front. It was worth while to inquire whether, when a man had been badly damaged by shell shock, it was safe, either for himself or his comrades, to allow him to return to the fighting line. Other questions also deserved consideration. There were many thousands of cases of shell-shocked men discharged to pension or invalided out of the service; and some investigation, not of individuals, but of classes, might be expedient. Were there not a very large number of men doing nothing but drawing their pensions whose health might be greatly improved by an organization designed to give them a little work at the beginning? Again, as regards the cases which did not offer hope of recovery, was the treatment given to them the most desirable? Was it wise that various classes of the disorder should be mingled together? Coming to the cases in which dereliction of duty was followed by court-martial, and in some instances by the death penalty, Lord Southborough expressed the hope that if a committee were appointed the War Office would keep back the names of the unfortunate men even from the committee itself, using a number for a name. But the committee might privately consider the evidence to see whether any other course could have been taken in regard to some, at any rate, of the men—not with the object of revising a verdict as to any particular man, but for guidance. The real question in these cases was whether there was a loss of will power. He gathered that where a plea of insanity was entered at a court-martial the medical officer was not allowed to report generally on a prisoner's state of mind. Was it not a fact that a prisoner before a court-martial on a charge of malingering was in a worse position than he was before a civil court? Judges in recent years had approached the position that responsibility might be abrogated by loss of control, if arising from mental disease and infirmity, and not from the accused person's own conduct. Lord Southborough asked whether it would not be possible to prepare the minds of the soldiers against the disasters of hysteria and neurosis. Dr. Morton Prince, a distinguished physician of Boston (Massachusetts), held that it might be driven into the soldier's mind as part of his ordinary training that shell shock was a form of hysteria due to his own thoughts and fears, and external suggestion arising from the conditions of the modern battlefield, and that so long as he received no physical injury there was little danger to be apprehended from the disaster. Those familiarized with the risks of their employment were less liable to neurosis as the result of a violent accident. But, however this might be, soldiers after recent experiences naturally had a dread of disaster. He submitted it was worth considering whether some method of giving confidence might not be

devised. In conclusion Lord Southborough expressed his preference for a Departmental Committee of Inquiry.

Lord Horne, as a general officer who had had the honour of commanding large forces in the field, supported the motion, holding that there was a tremendous field for research open. Referring to the courts-martial, Lord Horne said that when a death sentence or long term of penal servitude was involved, or when there was any case open to doubt, the matter came before a higher commander, who was advised by officers with unrivalled knowledge of military law, and if there was any suspicion that the crime was caused by shell shock the sentence was not confirmed until the accused had been under observation by medical authorities. He thought it extremely probable that some method of training soldiers to endure the strain of war better might be devised; but he suggested that the term "shell shock" should not occupy people's minds too much lest it should affect their nervous tension. Courage was merely a form of nerve control, and bravery as exemplified by some highly organized people was on a much higher scale than it was on the part of a man of lower mentality.

Lord Haldane, who said that he had reviewed probably more courts-martial than had any other man in this country, expressed agreement with the grounds of Lord Southborough's motion. His own opinion was based not on his experience of courts-martial, but on close conversations with eminent experts on shell shock and analogous conditions. People might have received the impression that shell shock and its results were something peculiar to persons of a nervous temperament. If so, that would not be very easy to distinguish from what shaded into want of physical courage, but in reality a great deal of shell shock and its consequences were due to quite different causes. He had had before him privately cases of persons who thought themselves very much aggrieved by their convictions by courts-martial, principally in the early stages of the war. They said they did not know what they were doing. The tribunal could not find them insane in view of what had happened, and put it down to an affection of the nerves very difficult to distinguish from physical cowardice. But now it was known that want of mental control was in a great many cases the result of an actual physical cause. For instance, the shock of an explosion might physically inhibit the action of the nerves which controlled breathing; the supply of oxygen to the blood, and therefore to the brain, might be impaired. The result was that the individual was for the time being, and perhaps for some time after, a different personality. He might be permanently in the position of having his reason impaired. The inquiry would be much more than a question for the ordinary experts. Even the most careful inquiry in the present state of knowledge would encounter difficulties in reaching definite results. All that could be done, he thought, was to collect the very valuable body of evidence which had been got together lately; its value, however, could only be appreciated by expert investigation. It had too often been the custom, because a man was a very eminent medical man, to ask him to investigate a branch of a very great science which had ramifications with which he was not familiar. A small body of picked men of the highest eminence in this particular branch of investigation should be got together who could roughly, at all events, lay down certain standards.

Lord Peel (Under Secretary for War) said that no doubt cases of "shell shock" had occurred in former wars, but were not recognized as such, and of course the number of troops engaged had vastly increased this particular form of damage. Whether before the information now accumulated had been obtained cases of injustice had occurred it was impossible to say, but immense trouble was taken that no person should be condemned to death unless for very grave and most serious reasons, and unless all the different causes of mistake had been eliminated. The instructions issued for courts-martial were that where the soldier in his defence, or in mitigation of punishment, made a substantial plea on medical grounds, a medical witness was invariably to be called, either to substantiate or rebut the case before the finding, if it was in defence, and afterwards if it were urged in mitigation of punishment. What happened in practice was that the court adjourned and a medical board was held. On the adjourned hearing one or more members of the board would be called as witnesses, to give evidence as to the facts observed and the conclusion from these facts. A mental specialist was always included if there were any suggestion of shell shock or any other kind of mental or nervous derangement. If no such board was held, and if by reason of something which transpired afterwards there was the slightest ground for further inquiry, the army authorities or general head quarters would order a medical board to examine and report before any action was taken to confirm the proceedings or to carry out the death sentence. No death sentence was carried out in any theatre of war unless it was confirmed by the Commander-in-Chief of the force. Each force was accompanied by a Judge Advocate-General, who was consulted by the Commander-in-Chief before the proceedings were confirmed. The number of cases in which the death penalty was carried out was small. For cases of cowardice 18 death sentences were carried out, and 266 for desertion. The total number of sentences carried out was 343, which showed that the two particular offences mentioned embraced much the larger proportion of the whole 343. The total number of death sentences actually passed on officers and men was 3,076—a percentage of 11.15 of the whole. These figures covered every theatre of hostilities, and the whole period from August 4th, 1914, to December 31st, 1919. The Government felt that great advantages might be obtained from the inquiry suggested by Lord Southborough. Many of the nervous and mental conditions encountered were entirely new to many of the medical officers concerned, and there had been a great many expressions in different medical journals of their individual views. Such investigation as was suggested would be of value in co-ordinating all the opinions and experience gained during the war, and it would be of great value also for the purposes of discipline. It would, however, be very wrong if such a committee were to investigate cases already settled, and he was glad the motion had been so drafted as not to involve this. The composition of the committee must be a matter for consideration. There would have to be upon it men of expert knowledge, but it must also be considered whether perhaps from the discipline side some lawyers should not be included, and perhaps some soldier also, who though he had not the medical experience of the experts was familiar with the conditions under which these cases arose. It might be wiser to have a mixed committee of that kind than one consisting wholly of experts, but that could be discussed later. The suggestion for a departmental committee was accepted by the War Office.

Hospitals for Mental Cases.—Replying to Major Entwistle, on April 27th, Mr. Churchill said that the number of mental cases which had passed through Warrington Hospital since August 4th, 1914, up to March 31st, the date of the last report of the present year, was 8,410. The statistics up to the end of 1919 were as follows: Number of cases treated, 8,127; discharged to their homes recovered, 3,657; discharged to asylums, 1,026; transferred to other military mental hospitals or repatriated overseas, 2,433; died, 108; remaining in hospital, 903. The statistics for Whitchurch Hospital from the date of opening to October 31st, 1919, were as follows: Number of cases treated, 1,862; discharged to their homes recovered, 1,102; discharged to asylums, 446; died, 33; remaining in hospital, 281. The hospital was closed on January 2nd of the present year.

Midwives.—Asked by Mr. Briant, on April 28th, what steps, if any, the Ministry proposed to take to secure that an adequate supply of midwives should be available, Dr. Addison said that according to the last report of the Central Midwives Board, the number of women entitled to practise as midwives on March 31st, 1919, was 44,166; but the number who gave notice of their intention to practise in 1918 was only 11,298. No useful estimate could be made of the total number of midwives required. The shortage which existed in some districts was due to the fact that the number of cases within reach was too small to enable a midwife practising independently to make a living. The Ministry of Health had continued the policy of the Local Government Board of urging local authorities and nursing associations to subsidize midwifery in the more scattered districts, and of paying grants in respect of such subsidies. By this means the proportion of the rural population served by trained midwives had increased since 1917 from 51 per cent. to 65 per cent., and steady progress was being made. Nearly all the County Councils and County Nursing Associations had framed schemes for extending the midwifery service of their county. A number of local authorities in urban areas had also, with the assistance of the Ministry, subsidized the provision of trained midwives in parts of their districts in need of this service. A grant in aid of the training of women as midwives was administered by the President of the Board of Education.

Expenses of the Ministry of Health.—The total estimate for the expenditure of the Ministry of Health in the year ending March 31st, 1921, is £27,572,797. Out of this total £21,859,000 is for housing. The grants for maternity and child welfare amount to £300,000, for the treatment of tuberculosis £700,000, in respect of venereal diseases £300,000, for the welfare of the blind £109,000. The grant promised to port and riparian sanitary authorities is estimated at £67,000. The estimate

for contributions, benefits, etc., in England under the National Insurance Acts amounts to £9,096,800; this includes special grants for medical referees of £155,000 and for sanatorium benefit £45,000. The estimate for the Welsh Board of Health, including grants amounting to £54,000 for the treatment of tuberculosis, is £129,220. To this is to be added statutory contributions and special grants totalling £604,000. The estimate for the expenses of the National Insurance Joint Committee is £402,330—almost the same as last year. The total amount of the estimate for the Scottish Board of Health is £3,949,279; this includes £2,910,664 for housing grants. The estimate for the Local Government Board, Ireland, is £1,729,441, an increase over the previous year of £1,493,121, mainly accounted for by grants for housing. The expenses of the National Insurance Commission, Ireland, are estimated to be £442,380, an increase of £5,435, the chief item under which the increase has taken place being salaries, wages, and allowances.

Medical Degrees in East Africa Protectorate. — Mr. Waterson, on April 14th, again raised the question whether persons holding Indian University medical and law degrees, such as L.M. and S. and B.A.B.L., who are eligible to practise medicine and law in India, were allowed to so practise in British East Africa. Lieut.-Colonel Amery (Under Secretary for the Colonies) said that Indian medical degrees or diplomas were recognized in the East Africa Protectorate, provided that they entitled the holder to registration in the United Kingdom. The general question of the position of Indians in East Africa was under consideration between the Secretary of State and the Governor of the Protectorate.

Dangerous Drugs.—On May 4th the Home Secretary introduced a bill to regulate the importation, exportation, manufacture, sale, and use of opium and other dangerous drugs.

Answers in Brief.

Mr. Chamberlain states that the corporation tax is not devised as a tax on the individual, but as an impersonal tax on the profits of a company prior to distribution. No question of recovery by an individual shareholder therefore could arise. A person whose entire income of £100 a year is derived from company dividends must suffer with the rest.

A Member was advised on April 27th that he should supply any information in his possession as to the conduct of massage establishments in London to the London County Council, the responsible body.

The ventilation of the House of Commons is again being considered by the First Commissioner of Works with the assistance of officials of the National Physical Laboratory.

There are now 20 homes of recovery under the control of the Ministry of Pensions, and 2,383 men are under treatment.

Mr. Montagu is still awaiting the views of the Government of India as to what increases are to be made in the pensions of the widows, children, and dependants of deceased officers of the Indian Army, the Indian Medical Service, and the Royal Indian Marine. He has marked the matter "Very Urgent."

Mr. Montagu is in communication with the Government of India as to whether any assistance can be given to officers who were invalided from the service on comparatively small pensions.

The sick berth branch of the navy has now been nearly reduced to peace numbers, and promotions will therefore shortly be resumed. A report has been called for as to the alleged shortage in sick berth ratings in the Royal Naval Hospital at Haslar.

The number of ex-service disabled men in training on April 18th was approximately 21,000, of whom 8,000 began their training during the present year.

Mr. Law has promised to bring under the notice of the appropriate Government Department the allegation that unwholesome foreign manufactured whisky is now being imported into this country, and that even in Scotland there is being dumped cheap American whisky.

An After-care Committee established in Hull to deal with persons who have received sanatorium treatment has produced a striking improvement in the condition of the patients discharged. Asked whether "after-care" may be made an integral part of the scheme for combating tuberculosis and receive liberal financial encouragement from the Treasury, Dr. Addison said, on April 28th, that the financial arrangements were under consideration.

The Minister of Pensions hopes to be able to announce within the next fortnight his decision regarding the provision of half-fare vouchers to ex-service men undergoing treatment away from home.

Of the large number of British prisoners of war taken by the Germans 222 were still unaccounted for when the British Military Mission closed its inquiry. No similar inquiry had been made in Turkey, as any information obtained would be of small value.

Dr. Addison stated, on April 27th, that the financial arrangements which will be necessary on the termination of sanatorium benefits was under consideration, and he hoped to make an announcement at an early date.

It is estimated that an "all trading profit tax" of 5s. 6d. in the pound would be required to yield the equivalent of the Excess Profits Duty and Corporation Profits tax.

The number of Poor Law children in receipt of institutional relief on January 1st of this year was 59,283; the number in receipt of outdoor relief (including children boarded out) was 138,380. There were in the sick wards of workhouses 2,496 over 3 years of age and 2,326 under; in other wards the numbers were 3,084 and 2,914 respectively.

Asked on May 3rd whether the Discharged Soldiers Committee of the Citizens Committee of Birmingham was finding difficulty in dealing with orthopaedic cases in consequence of the masseuse staff being too small, Major Tryon said that the necessary additions to the staff would be made as soon as possible.

Two cases of small-pox have recently occurred in Bolton, one ending fatally. The medical officer of health has reported that the first case was that of a woman employed at a cotton mill, and that it is possible she contracted the disease from infected cotton.

The Minister of Health has given instructions that wherever practicable vacancies occurring on local Advisory Blind Committees shall be filled by blind persons, until at least one-third of the Committee (excluding representatives from local authorities) consists of blind persons.

The number of retired regular naval and military medical officers employed by the Ministry of Pensions on a sessional basis who are drawing pensions is 152, being 5 per cent. of the total number of medical men so employed. The maximum number of sessions is eleven a week, but owing to the number of medical men available for the work the average number of sessions a week which can be given to each officer is less.

AN AMERICAN HOSPITAL IN LONDON.

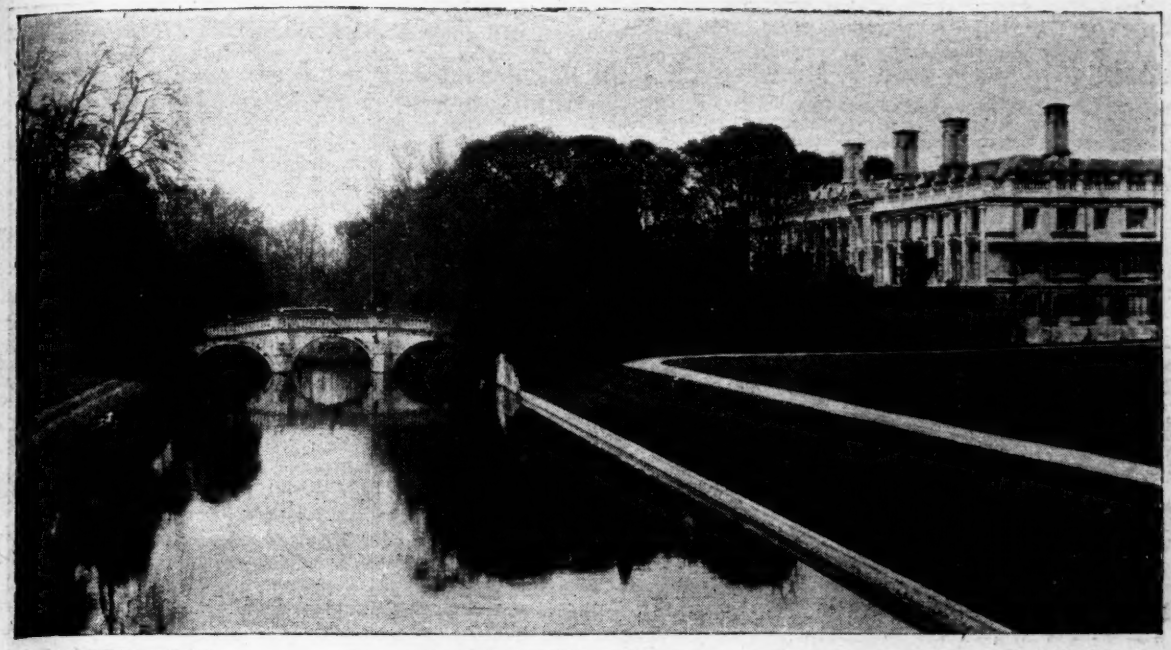
CONSIDERABLE progress has recently been made, both in England and the United States, with the organization of the American hospital for London; as we announced at the time, the hospital was founded at a meeting of the Royal Society of Medicine on July 17th, 1919, when Lord Reading was in the chair. A governing council was appointed, with Mr. Franklin, F.R.C.S., as honorary secretary. The American committee has now received a cablegram from ex-President Taft accepting the presidency of the institution in the United States; Lord Reading has accepted a similar position in Great Britain, and Lord Bryce is vice-president.

The plans have been carefully considered by an influential committee of American citizens resident in London, and steps are now being taken to incorporate the institution according to the laws of the State of New York, and a campaign will then be opened to raise an endowment fund of several million dollars. Under present conditions a large building scheme is hardly desirable, but the committee hopes to open a temporary building for the accommodation of patients early in the coming autumn.

The resolution by which the American Hospital was founded laid down that one of its most important aims was "to act as a link in binding together the two nations for the advancement of medical science as affecting the welfare of humanity." For many years past American graduates who desired to continue their medical education in Europe settled almost as a matter of course in Berlin or Vienna, where special opportunities were freely placed at their command by the German and Austrian authorities. Since 1914 conditions have changed, and the leading members of the American colony in London have determined that American graduates who come to Europe shall find in London all the facilities they were formerly offered on the Continent. This decision has received the fullest support of the British medical profession. The Medical Committee in Great Britain includes Sir Arbuthnot Lane, Bt., Sir Humphry Rolleston, Sir John Bland-Sutton, Sir John Y. W. MacAlister, and Mr. Philip Franklin, whilst the similar committee in the United States consists of such well known physicians and surgeons as Dr. George W. Crile (nominated by the American Academy of Science on International Relations), Dr. W. J. Mayo and Dr. Charles H. Mayo of Rochester, Dr. A. H. Ochsner of Chicago, Dr. Rudolph Matas of New Orleans, and Dr. Franklin Martin of Chicago.

The organization of the American Hospital is thus becoming of considerable international value, whilst in medicine it presents great possibilities.

The American Committee in London is proceeding steadily with its plans for the future. The social side is not being neglected, and in July the authorities of the hospital will entertain at dinner in London one of its American colleagues, Dr. Charles Mayo of Rochester, Minn., who is coming to this country to attend the Annual Meeting of the British Medical Association in Cambridge, where he will take part in the proceedings of the Surgical Section.



Scott and Wilkinson] BACK OF CLARE COLLEGE. [*Photo, Cambridge.*

EIGHTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION, CAMBRIDGE. 1920.

EVOLUTION OF THE MEDICAL SCHOOL

(*continued*).

As mentioned in the previous article (BRITISH MEDICAL JOURNAL, April 10th, p. 505) Humphry succeeded to the Professorship of Human Anatomy in 1866, and George Paget to the Regius Professorship of Physic in 1872. Neither of them was young when appointed, Humphry being 46 years of age and Paget as much as 62; but their work and influence had begun many years before.

Paget succeeded, as early as 1842, in persuading the University to institute bedside examinations for its medical degrees, and these were the first regular clinical examinations held in the United Kingdom. His other innovations may seem less radical, but were not less real. His service to the school consisted largely of a strenuous advocacy of everything that made for its advancement, such as the creation of Departments of Physiology and Pathology and the encouragement of all branches of Natural Science. His courteous and tactful manner succeeded where more aggressive methods might have failed. He spent the whole of his professional life in Cambridge, was Linacre Lecturer on Medicine at St. John's College from 1851 till 1872, and Representative of the University on the General Medical Council from 1863 till 1869.

Humphry came to Cambridge as a general practitioner, and in 1842, at the age of 22, was appointed surgeon to Addenbrooke's Hospital.

"He at once began to give clinical lectures and systematic teaching in surgery. In 1847 he was invited to act as deputy to the professor of anatomy [Clark], and he gave the lectures and demonstrations upon human anatomy from 1847 to 1866. . . . The Museum of Anatomy and Surgical Pathology engrossed much of his attention, and many of his holidays were spent in journeys designed expressly to secure specimens to fill its shelves. As an anatomist he was one of the earliest workers who attempted to bring human anatomy into line with the growing science of morphology."[1]

He entered Downing College as a fellow commoner in 1847, graduated M.B. in 1852, M.D. in 1859. In 1869 he succeeded Paget as representative of the University on the General Medical Council.

When Humphry began the teaching of anatomy the accommodation for dissection was only a small room adjoining the Anatomical Museum or Rotunda in Downing Street; and the lecture theatre in the same building was a mean room which would admit but a small class. Under his management the number of students increased until it became necessary, in 1879, to build a considerably larger dissecting room, and to hold the lectures in the larger theatre which had been built for zoology and comparative anatomy.

In the Natural Science Tripos Human Anatomy was at first admitted only as a branch of Comparative Anatomy. But Humphry's teaching invested the subject with so much more of the scientific spirit than was usual at the time, that he succeeded in getting Human Anatomy admitted as a separate subject in the Tripos from 1876 onwards.

At the appointment of Humphry the Professorship of Anatomy was subdivided, the comparative side being transferred to a new Professorship of Zoology and Comparative Anatomy, of which the first tenant was Alfred Newton of Magdalene College. Three years before his appointment new buildings had been commenced, including a museum which for its time was large and convenient. Under Newton's administration the department was greatly advanced, and the comparative collections received large additions, to which Humphry as well as Newton contributed.

The organization both of the museum and of the teaching was carried out chiefly by John Willis Clark of Trinity College, son of William Clark, the Professor of Anatomy, and nephew of Robert Willis, the Jacksonian Professor and eminent antiquary. He was appointed Superintendent of the Museum of Zoology when the professorship was instituted. A man of very versatile talents, he served the cause of science at Cambridge in many ways, but attained more distinction as an antiquary than as a zoologist. Sir Arthur Shipley, in his *Memoir of John Willis Clark*, tells us that an entirely new era in the teaching of zoology in the University was begun in 1871, when J. W. Clark, with the assistance of his friend T. W. Bridge (afterwards Professor at Birmingham), began for the first time to give courses of practical work, in which the students actually dissected the animals instead of watching a dissection by the professor, and were encouraged to make permanent preparations for their future use.

Humphry desired that the University should appoint a professor of surgery, and offered to accept the appointment without stipend and to resign the professorship of

[1] Sir D'Arcy Power, in the *Dictionary of National Biography*.

Hills and Saunders] GREAT COURT OF TRINITY COLLEGE. [*Photo, Cambridge*

Showing Chapel, Fountain and west front of Great Gate.

anatomy. This change was carried out in 1883, and Humphry held the new professorship until his death in 1896. The professorship of surgery was a move towards the ideal, which Humphry always cherished, of making a *complete* medical school in Cambridge; but in this matter very few persons shared his views, for it was obvious that the town and neighbourhood of Cambridge were not populous enough to supply the necessary clinical material. Addenbrooke's Hospital is admirable for the first few months of clinical work, but after that the student should proceed to one of the great cities.

Through the influence of Paget and Humphry, and on the recommendation of Huxley, Michael Foster was brought to Cambridge to create the School of Physiology. He came in 1870 as Praelector in Physiology at Trinity College; the University did not give him a professorship until 1883. At first a couple of rooms in the zoology building were assigned to his department; these were not convenient, and the supply of apparatus was meagre; but Foster soon gathered around him many enthusiastic students, and from these he selected a number of demonstrators. His first demonstrator was H. Newell Martin, whom he brought from University College, London. Subsequent demonstrators trained in his Cambridge school were Gaskell, Sheridan Lea, and the present Professor of Physiology. For the growing department new quarters were provided in an extension of the zoology block of buildings in 1879; and eleven years later additional rooms were built, including a large lecture theatre for the joint use of the Professors of Human Anatomy and of Physiology. These buildings were used by the Physiological Department until the opening of the handsome Physiological Laboratory presented by the Worshipful Company of Drapers.

Paget, Humphry, Foster.

The writer had the privilege of working for several years under these three pioneers—Sir George Paget, Sir George Murray Humphry, and Sir Michael Foster—and on that ground he ventures to record his personal impressions of them, speaking in the first person, as his views may be influenced by personal bias.

In Paget the most striking characteristic was his extreme courtesy under all circumstances. His manner to patients was gentle and sympathetic, but authoritative, inspiring them with confidence to an unusual degree. His discussion of cases in hospital was critical and interesting, but (in later years at all events) he did not enter into commonplace details; he left these to be discussed between the students and the house-physician. He was already old when I first met him; and though he was still agile and keen, his more strenuous work for the School was finished.

Humphry was the most inspiring teacher I have ever known. He delivered his expositions not merely with earnestness but with enthusiasm, and in lecturing he seemed to speak to his pupils individually rather than as a class. His language in lecturing was informal, even colloquial. He never stooped to be funny; but his lectures, like his conversation, were often illumined with boyish gaiety and laughter. He often tested the success of an exposition by asking questions upon it, and if anyone happened to fall asleep at lecture, he was sure to be aroused by a question. Humphry always lectured sitting, and surrounded with abundant means of practical demonstration—real specimens, diagrams, and blackboard; and he enhanced the objectivity of his lectures by frequent reference to instances which had come under his own observation. He paid great attention to the functional aspect of all features and to their evolution. His enthusiasm was most pronounced over the mechanism of the joints, in many cases so exquisite, though he was not blind to the shortcomings of Nature, the failures of evolution, as for instance in the inadequacy of the external ligaments of the ankle. But he paid no attention to trifling details, such as are learnt only for examination, to be soon forgotten, or if remembered, to occupy room in the memory which is needed for more useful things. It was customary to call his anatomy "Humphryology," and to say that it was of no use for any examination but his own. It might not have sufficed for the "First Fellowship," but some of his pupils can testify that it did not fail them in other examinations.

Foster's mode of lecturing was in diametric contrast to

that of Humphry. His language was literary, carefully weighed, almost without a superfluous word. His method was strictly critical, and I cannot remember his ever betraying enthusiasm; he seemed to fear the possibility of over-statement, or the suspicion of advocacy. He never used any demonstration or objective illustration at lectures, not even a diagram, except such as he rapidly and skilfully drew on the blackboard—and wiped off immediately, so that his pupils had not time to copy it, or could only copy it incorrectly. All this was intentional. He said to me in after-years: "I don't wish my pupils to have anything to divert their attention from *what I have to say*." He objected especially to the optical lantern in teaching, saying that it was a method of obscuring one's exposition.

I was too much interested to criticize his lectures unfavourably, and no doubt many of his students were as satisfied as I was—but not all; a few complained that the lectures were intolerably dull and uninforming. As I look back on these lectures I think that, though brilliant expositions, they were a survival of the lecturing method of the Middle Ages, and not suitable for natural science, the teaching of which should be objective and practical.

His forte was organization: his department worked with remarkable regularity. He had the faculty of getting a number of men to carry out his arrangements thoroughly and willingly. In this way he delegated not only the practical demonstrations, but the lectures on special branches of the subject, to his lecturers and demonstrators. I do not remember to have seen him handle any apparatus but the microscope, and that to examine preparations made by others. He seemed to absent himself a good deal from his laboratory, but kept in touch with everything. If in spite of best intentions anything went wrong, he would remind the responsible person, not by a reprimand, but by a kindly hint that he depended upon him to prevent a recurrence.

If a student came to him with some new idea or a proposal for original investigation, Foster's intensely critical reception of it was liable to act as a wet blanket. This critical attitude probably deterred Foster from carrying out any important original work after his student days; he would probably not have trusted his own results. He had a particular objection to speculation, and did a good service in checking the publication of speculative ideas as if they were discoveries. Of course, speculation is useless except as an incentive to investigation, but without a speculative mind the scientist can hardly advance. The explorer must always imagine something beyond the visible horizon.

CORRIGENDUM.

In the last article, published on April 10th, it was implied that the Macartney collection was moved from the old to the new anatomical museum. This is incorrect, the Macartney collection not having been purchased until 1836, four years after the building of the Rotunda.

England and Wales.

THE CARLISLE EXPERIMENT IN LIQUOR CONTROL.

DR. HENRY BARNES, O.B.E. (Carlisle), has forwarded the following brief account of the fourth annual report of the General Manager.

Sir Edgar Sanders, the General Manager for the Central Control Board (Liquor Traffic) of the Carlisle and District Direct Control Area, in his report for the year 1919 (which has been issued as a Parliamentary White Paper [Cmd. 666], price 2d. net), briefly summarizes the measures which the special position of the Board at Carlisle has enabled it to take. The summary does not pretend to be exhaustive; it is a catalogue of facts only, and not of results:

1. The reduction of the number of licences in the City of Carlisle from 119 to 69.
2. The suppression of all grocers' licences.
3. The limitation to a reasonable number of the places where "off" sales of spirits are conducted.
4. The abolition of advertisements of intoxicants.
5. The limitation of the sale of intoxicants to young persons.
6. The appointment of salaried managers in all the Board's houses having no pecuniary interest in the sale of intoxicants.
7. The provision of food at public-houses.
8. The improvement of the structure and arrangements of many of the public-houses.
9. The provision of tea-rooms in country inns.
10. The permanent closing of two out of the four breweries in Carlisle.
11. The bottling of beer at one centre instead of a dozen, with its resulting economy.
12. The establishment of one up-to-date spirit store, instead of the wholesale trade being carried on at thirteen different places.
13. The organization of the whole trade in intoxicants on an economical and co-ordinated business footing, and the consequent prevention of overlapping.

In dealing with the supply of food on licensed premises it is noted that in addition to the Gretna Tavern six public-houses have been reconstructed as "food taverns"; the plan was described in the account of the report for 1918, published on April 19th, 1919, p. 487. The houses chosen were situated in different parts of the city, and were designed to cater for all classes of the community. The reconstruction in each case includes up-to-date kitchen accommodation and a dining-room, separate from the bar, where cooked meals are served and where in most instances cooked food can be purchased and taken away for home consumption. That these houses are appreciated is shown by the fact that their trade in food in 1919 amounted to £18,648, and the number of meals supplied for "on" and "off" consumption was about half a million in the year. Intoxicants can be obtained with the meals if desired, but it is a much more usual custom for a man to have his meal in the dining-room and then go through to the bar for a drink and a smoke afterwards. The popularity of these reconstructed houses is evident from the large numbers who frequent them. In Carlisle, where the distances are not great and most people live near their work, the food taverns, which have been well placed, go far to meet what demand there is for food and light refreshments.

The accounts of the undertaking for the year ending March 31st, 1919, which were published last October and appear as an appendix to this report, show that the capital involved at that date was £853,550, and that the total trading profits for the year were £137,985. After providing for interest on the money supplied by the Exchequer and for all the ordinary trading charges, the net surplus accruing to the State for the year was £96,518. This sum gives a return of nearly 12 per cent. on the average capital involved, in addition to the interest already provided for. In other words, there was for that period a full return of 17 per cent. on the whole capital employed. The accounts for the year ending March 31st, 1920, have not yet been completed, but interim accounts were prepared for the half-year to September 30th, 1919, and sufficient is known of the results for the year to state that the surplus which will accrue to the Exchequer in replacement of the capital cost of the undertaking will not be less than during the previous year. Assuming this to be the case, the accumulated surplus at March 31st, 1920, will amount to not less than £300,000. Taking into account the gradual accumulation of the capital, there will have been paid off up to March 31st, 1920, on that basis, upwards of one-half of the average capital employed from July, 1916. These facts indicate that, so far as the financial aspect of the scheme is concerned, it has been a success.

The number of convictions for drunkenness at Carlisle was actually smaller by two in 1919 than 1918; in the country generally the number was almost doubled. The Chief Constable of Carlisle, in his report to the justices for the year 1919, said:

> The continuance of sobriety I attribute almost entirely to the system under which intoxicants are sold in Carlisle, where none of the managers have any interest in the amount of liquor sold, and all are given strict instructions not to serve customers who appear to have had enough. I am unable to account for it in any other way, for while Carlisle is unique in its licensing system, it is subject to all the causes just mentioned, which in the country generally have contributed to a very decided increase in drunkenness. There can be no question in the minds of careful and impartial observers that the direct management of the licensed trade by the Control Board has been of great benefit to the city.

The general manager mentions various facts which throw light on the feeling of the public, which is one that cannot be estimated with any degree of accuracy. As to the customers, all that can be said is that if there were any real signs of discontent they would soon be apparent. Very few complaints of substance are made, notwithstanding that interested parties may try to persuade the public that

they are being badly treated. The managers assert that whereas there was loud grumbling when it was necessary to curtail the supplies drastically under the Food Controller's orders, now that the supplies are adequate the amount of grumbling is negligible. On the other hand, the customers appreciate what has been done for them in the way of improved conditions. It appears to be incontrovertible that any proposal to hand back the licensed trade to private interests would be received with dismay by the great majority of the inhabitants. At Carlisle the system of direct control has greatly improved the conditions under which the liquor trade is carried on. There have been put into operation most of the generally accepted temperance proposals made during the last half-century. This has been done without any sacrifice of the reasonable rights and privileges of the community, and without undue interference with the liberty, tastes, and preferences of the great mass of the adult population.

WHOLE-TIME MEDICAL APPOINTMENTS UNDER THE WORCESTERSHIRE COUNTY COUNCIL.

At a meeting of the Worcestershire County Council, on April 24th, the Chairman stated that difficulty had arisen in securing applicants for the ten whole-time appointments authorized by the council in connexion with the medical service scheme for the county. Two doctors had applied, but when the council endeavoured to insert the advertisement in the BRITISH MEDICAL JOURNAL and the *Lancet* it was informed that advertisements could not be accepted offering a lower salary than £500 per annum for such posts. A letter had also been received from the Ministry of Health expressing doubt whether tuberculosis officers, who should have special qualifications and experience, could be secured for the salary offered—namely, £450. The chairman objected to this sort of pressure, and to "allowing the medical press to dictate to the council."

Dr. H. E. Dixey said that when the price of living was considered, £500 was not an extravagant sum to be paid to a whole-time medical officer, and reminded the council that the doubts expressed by the Ministry of Health had found confirmation in the report of the medical officer of health on the scheme. He proposed that the committee should be authorized to advertise for eight assistant medical officers at a commencing salary of £500, rising to £600 per annum by annual instalments of £25; that the two medical officers already appointed should be placed on the same footing; and that the two senior assistants should have special advisory functions and should receive a salary of £600 per annum, rising to £700. The council was aware of the necessity of the scheme, and would, he hoped, agree to these proposals; of the increases, amounting to £650 a year, which were contemplated, half would be paid by the Board of Education. Dr. F. W. J. Coaker seconded the motion.

Other members protested that the county council should not submit to the treatment accorded them by the medical press. One member was not satisfied that the officers could not be obtained for £450 a year, and proposed first to try to do so; it would then be time enough to discuss an increase. Dr. Dixey recalled a somewhat similar situation which arose some years ago when the council decided to advertise in the lay press, and the chairman said he thought that although they got some applicants in this way they did not appoint any of them. Mr. G. E. Wilson said that this was not a new policy on the part of the medical press, and recalled certain advertisements for asylum medical officers issued some time ago by the council. Mr. C. Dalley thought that £500 a year for a trained medical man was not an extravagant sum; the council would be unwise to play with this matter. Dr. Broughton alluded to the serious shortage of doctors, which would be felt more in three or four years' time than to-day. In the end an amendment was carried by 34 votes to 23 that the appointments should be advertised at £450 a year in the London daily papers.

In March, 1915, the Worcestershire County Council authorized the appointment of an assistant school medical officer at a salary of £350 a year, inclusive of travelling expenses. The net salary offered was less than the minimum approved by the British Medical Association, and for some months, the county council's advertisement having been refused, a notice was printed in our columns. In October, 1915, the county council decided to abandon the proposed appointment, probably for the duration of the war. Possibly these are the events to which the members of the council allude; it seems clear in any case that the Worcestershire County Council in the past has not been unacquainted with the difficulties which it makes for itself by its unwillingness to pay reasonable salaries.

Scotland.

VILLAGE SETTLEMENTS FOR TUBERCULOUS EX-SERVICE MEN.

THE Scottish Board of Health has issued to local authorities a circular letter[1] summarizing those sections of the Departmental Committee's Report[2] of August, 1919, which deal with village settlements. Such settlements, which are intended primarily for discharged soldiers or sailors, should, it is said, adjoin and be closely related to a sanatorium and training colony; they should provide permanent employment, with housing accommodation for the patients and their families. The Committee suggested the provision of ten village settlements in Great Britain; on this basis, in Scotland one, or perhaps two, should be set up. The Treasury has not yet decided to make available the capital grant of one million pounds which, according to the suggestion of the Departmental Committee, should be provided for the erection and financing of settlements; nor is it expected that it will until constructive proposals are made by the Ministry of Health and the Scottish Board. The immediate purpose of the latter body is to invite local authorities responsible for administration of tuberculosis schemes to devote attention to the best methods for the foundation of village settlements; the full bearings of this question will be discussed at a conference shortly to be summoned.

MALARIA IN SCOTLAND.

The Scottish Board of Health has issued to local authorities a memorandum[3] pointing out that there are in Scotland many men who had malaria when serving with His Majesty's forces, and that among them may be persons carrying the parasites in their blood. The presence of the anopheline mosquito has been recorded in Aberdeen, Dumbarton, Fife, Inverness, Lanark, Midlothian, Perth, and Sutherland; climatic conditions are likely to limit its activities to the months of May to September, inclusive. The attention of medical men is drawn to the possibilities of the occurrence of indigenous cases of malaria among the civil population; children, especially such as are ill-clad or ill-nourished, are said to be particularly susceptible. To facilitate diagnosis the Board has made an arrangement whereby blood specimens sent by local authorities will be examined at the laboratory of the Royal College of Physicians for a fee of 10s. 6d. Malaria has been notifiable in Scotland since August 1st, 1919.

INFLUENZA-STRICKEN ST. KILDA.

The life of St. Kilda, a small island some seven miles in circumference far out in the Atlantic, to the west of North Uist, has been suspended by an epidemic of influenza and pneumonia. The news was brought by the trawler *Active*, which sailed again for the island from Aberdeen on May 2nd with supplies of medicine and comforts. The inhabitants support themselves chiefly on the myriads of sea-fowl that frequent the cliffs of the island; the eggs are collected and the birds are killed for the feathers and for the oil which some species yield. Fishing is perilous, and the care of the few sheep on the island has become impossible, because, of the eighty inhabitants, sixty are or have been ill. The nurse and the parish minister have done their best to cope with the conditions, but the scale of the calamity has been too much for their resources.

SMALL-POX IN SCOTLAND.

Cases of small-pox continue to occur in Glasgow; altogether 49 persons are known to have been affected in

[1] Circular I.D.B., No. IX, 1920.
[2] H.M. Stationery Office, Cmd. 317, BRITISH MEDICAL JOURNAL, August 30th, 1919, p. 275.
[3] Memorandum on Indigenous Cases of Malaria in Scotland. Edinburgh: H.M. Stationery Office. (Price 1d. net.)

Glasgow or its immediate neighbourhood; 41 were under treatment at the beginning of this week. Among the earlier cases two groups could be traced to infection brought by sea from India and Alexandria respectively, but the source of the infection of the more recent cases has not been ascertained. The proportion of cases occurring in unvaccinated children remains high, but there is evidence that the public is recognizing the importance of having children vaccinated, as a considerable number are now being brought to the vaccination stations. Over 8,000 persons in the immediate neighbourhoods of the different cases have been vaccinated. A case of small-pox in a young man was notified in Edinburgh at the end of last week; no connexion with the Glasgow cases has been established.

Ireland.

GRAYMOUNT HOSPITAL, BELFAST: SIR H. GAUVAIN'S REPORT.

THE report of Sir Henry Gauvain, M.D., as to the suitability of Graymount as a place for the treatment of non-pulmonary forms of tuberculosis amongst Belfast children was presented to a meeting of the Tuberculosis Committee of the Corporation on April 26th.

Sir Henry Gauvain reported that the objections founded on the clayey soil and the site in the Lagan valley, said to be damp and foggy, were sufficient to render the place unsuitable as a hospital for surgical tuberculosis. The house itself was exceptionally well constructed, but it was costly and generally unsatisfactory to adapt houses built as private residences for the purposes of a surgical hospital, and the levels at Graymount did not lend themselves well to suitable additions. He advised the selection of a suitable site of some 20 acres and the construction of a specially designed hospital, with Graymount as part of the scheme. A hospital at Graymount in the existing buildings, with additional wards, would be expensive and would never be more than a makeshift. He recommended that the hospital should be on the sea front, with abundant sunshine and a considerable foreshore; the soil should be sandy, the rainfall moderate, the country relatively treeless, and the atmosphere pure; hills should protect the site from the north, and rivers should be remote. The patients should have freedom of access to the beach, and the spot chosen should not be overcrowded by holiday makers. There should be no cliffs, and there should be a maximum of reflected light, an ample supply of pure water, facilities for adequate drainage, and easy access to the nearest town. Graymount should be used only as a temporary hospital until a suitable building could be erected, when it might be used as an open-air school for surgical cases, thus relieving the pressure in the hospital itself. The new hospital should accommodate 100 cases, with facilities for extension; the work done should be of the very highest order.

MEDICAL FEES FOR PUBLIC WORK.

At recent meetings of the City of Limerick Medical Association, consisting of practitioners in that town, various important medical questions were considered with regard to (1) medical fees for life insurance examination, (2) the salary of the medical officer attached to the Limerick post-office, (3) surgeon to the Admiralty, (4) fees paid to certifying factory surgeons. The following resolutions were unanimously adopted, and are now in force:

1. That the scale of fees for life insurance examination shall be as follows:

INDUSTRIAL ASSURANCE (WEEKLY PAYMENT SYSTEM).		
Ordinary	Under £100	£0 10 6
	£100 to £500 (inclusive)	1 1 0
	Above £500 and less than £1,000	1 11 6
	£1,000, or any higher sum	2 2 0

2. That owing to the inadequacy of the salary and the multitudinous duties of the medical officer to the G.P.O. the position, which has been vacant for some years past, shall not be applied for; and that the fees shall be 10s. per visit (including certificate) within the borough boundary.
3. That the position of surgeon and agent to the Admiralty be not applied for under existing terms. Fees shall be 10s. per visit (including certificate) within borough boundary, and no duties other than purely medical duties be rendered.
4. *Re* position of certifying factory surgeon: The above association cannot recommend any medical man to apply, owing to extreme inadequacy of fees.

The following resolution has also been passed:

That the rate for contract practice be increased 25 per cent. Same to come into operation from beginning of next quarter.

Correspondence.

DUODENAL ULCER AND THE HYPERTONIC STOMACH.

SIR,—The very interesting lecture by Dr. A. F. Hurst on gastric and duodenal ulcer, published in your issue of April 24th, demands brief comment. Dr. Hurst's observation that duodenal ulcer is associated with a hypertonic stomach, emptying with unusual rapidity, is undoubtedly true in a large majority of cases. But the rule is by no means absolute, for I have recently operated on two cases in which *x*-ray examination showed a low-lying, hypotonic stomach, with considerable delay in emptying, but operation disclosed a definite chronic ulcer in the first part of the duodenum, unassociated with any organic stenosis. In each case the stomach was carefully examined, but there was no trace of gastric ulceration. In neither case had the radiologist been able to obtain satisfactory filling of the first part of the duodenum, so that the characteristic deformity of the duodenal bulb was not seen. The radiographic evidence, according to accepted ideas, pointed to gastric ulcer or simple gastroptosis. The clinical histories pointed to duodenal ulcer and proved to be right.

May I add a mild protest against Dr. Hurst's *obiter dictum*: "Everyone must agree that the surgical treatment of gastric and duodenal ulcer is a confession of failure"? There is a sense in which any operation, as, for instance, partial gastrectomy for cancer of the pylorus, is a confession of the failure of purely medical treatment. But the crux of the matter lies in this test: Does surgery offer the patient the prospect of a quicker, surer, and more permanent cure than medical treatment can give? From surgeons who are regularly dealing with gastric and duodenal ulcers there can be only one answer.

Dr. Hurst's convincing remarks on the relation of hyperchlorhydria to ulcer should remind us of the fact, long recognized but never more conclusively proved than by Mr. Sherren in his recent Hunterian Lecture,[1] that gastroenterostomy is followed by a constant slight regurgitation of alkaline bile into the stomach and a permanent reduction of gastric acidity. It is an undoubted fact that the great majority of patients with chronic ulcer show, after appropriate operative treatment, a permanent tolerance to all foods and freedom from their old periodic dyspeptic crises.—I am, etc.,

Manchester, May 1st. JOHN MORLEY.

ARSENIC IN LETHARGIC ENCEPHALITIS.

SIR,—In the leading article of April 24th on "Types and Treatment of Encephalitis" I was interested to see that the use of arsenic and neo-salvarsan is strongly condemned, as I have recently used neo-kharsivan in a case with markedly beneficial results.

On April 3rd I was called to see a woman aged 55, who complained chiefly of intense headache. There was a history of occasional diplopia recently and dizziness; respiration was rapid (55), pulse 65, temperature subnormal. There were frequent involuntary movements of the lips. During the following days lethargy developed; it was with effort that the eyelids were opened, and they very soon closed again. As I had not previously seen a case of lethargic encephalitis, I requested Dr. J. R. Monro of Spalding, who had some experience, to see the case with me, and he confirmed the diagnosis. On April 9th, symptoms having developed steadily, I gave 0.25 gram of neo-kharsivan intravenously. The next day the patient had obviously improved. On April 11th she did not seem so well; I therefore gave a further injection of 0.3 gram intravenously. She felt very ill some three or four hours later, but next day was much better. This improvement lasted several days, but as her condition did not seem so favourable on April 17th I gave 0.3 gram again. This was again followed by a feeling of serious illness a few hours later—not, however, sufficient for me to be sent for—and the next day the patient was cheery and feeling pretty well. She is still doing well.

My object in sending this brief note is to encourage others who might be disposed to try this drug, but who, in face of the very definite pronouncement of Netter, might refrain from its use.—I am, etc.,

Long Sutton, May 2nd. W. A. WILSON-SMITH, M.D.

[1] *Lancet*, March 27th, 1920.

PUBLIC HEALTH VERSUS THE STATE.

SIR,—Dr. Freer "reminds" me of the war-limited hospital accommodation for civil patients. It was a work of supererogation. The Fabian report to which I referred is dated March, 1914; Mrs. Nevinson's paper which first drew my attention to the run on workhouse beds was early in the war, and of course dealt with the past; and I had limited myself to the end of 1915.

In answer to him, I pleaded the injustice of taxing the thrifty, in need and out, for the sake of the shiftless. His rejoinder, that it is not only the shiftless who have times of stress, seems to lack relevancy, unless it is meant as corroboration of my point.

May I say a few more words to wind up this correspondence? There is a terrible discrepancy between the tuberculous death rate as it is to-day and as it should have been had the rate of fall persisted which obtained under a policy opposite to that of to-day, and the tale of deaths which we had a right to look on as avoidable from 1896 to 1915, already exceeds the deaths in any war previous to the great war. Seeing that the change of policy has aimed at social amelioration, especially of the lives and health of the poor, it is incumbent on the advocates of this change to explain the discrepancy. This duty they disregard, except that now and again they will assign an obvious cause for a rise in any given year or two, a method which leaves much to be desired in explanation of an eighty-years' record or a world record.

I think any fair-minded man will acknowledge that in these columns there has been no satisfactory answer to the explanation I have submitted; indeed, I believe he would admit that my position has been strengthened by the opposition it has met. This much is certain, that while not contradicted by any facts as yet shown, it does explain all the startling facts, and on the world scale. For example, the three countries which in the last forty years of last century showed a rise in tuberculous mortality were exceptional not less in that than in the failure of wages to rise. It explains not only many fluctuations, but the rapid fall, the slackened fall, and the final rise in Great Britain. And it has stood the supreme test of successful prophecy, in that it foresaw a rise after the Insurance Act, and a check to the rise in the later years of the war. As Sir R. W. Philip shows for Scotland, the later years probably reduced the tuberculous mortality which otherwise would have obtained; and the obvious explanation is the complete temporary abolition of poverty among the classes which used to be called, and will shortly again be called, "the poor."

If you take, say, Mr. Harold Cox's letters to *The Times* in 1911 on the Insurance Bill, and compare them with, say, Mr. George's speeches at the time, you will find all the large prophecies of the one have come true and all those of the other falsified. Why should we pursue with unshaken confidence the principles of the false prophet and contemptuously disregard those of the true?—I am, etc.,

Rayleigh, Essex, May 3rd. B. G. M. BASKETT.

TREATMENT OF SEPTIC PERITONITIS.

SIR,—Mr. Steward, in his lecture on septic peritonitis (April 17th, p. 527) says: "A large amount of fluid is poured out, partly as free fluid into the peritoneal cavity. . . . This fluid is highly toxic; consequently the patient suffers from an acute toxaemia." Surely the fluid that is poured out by the peritoneum in response to attack is antitoxic and bactericidal; it only becomes toxic when its defensive powers are exhausted and the resistance of the peritoneum overcome by the invading sepsis. This fluid is Nature's first line of defence against septic infection, and is thrown out at once in order to gain time for the preparation of adhesions, which form her second line of defence.

That this fluid is non-toxic is demonstrated by every-day experience. A child will come in with a temperature of 102° and pulse 120; an acutely inflamed appendix is found, and an abdomen full of turbid fluid; unless this fluid is quite purulent and has the characteristic smell of *Bacillus coli*, the wound is closed without any attempt at drainage. In the morning the temperature and pulse will be normal, or nearly so. If this fluid were toxic the result of this closure would be disastrous, and if it were responsible for the toxaemia previous to operation the symptoms of toxaemia would continue until all the fluid had been absorbed.

Drainage is a difficult and at present a very confused subject in abdominal work. An intra-abdominal abscess cavity may be drained, but in the great majority of cases as soon as the contents are evacuated the walls of the cavity fall in.

When we put a tube into the abdominal cavity it is isolated in a marvellously short time by adhesions between viscera, and viscera and parietes. So certain in its action is this property of the peritoneum that we frequently depend upon it in operations such as those of gastrostomy and cholecystostomy. We know also that adjacent peritoneal surfaces when irritated will be strongly adherent in less than twelve hours. It seems certain, then, that so long as the peritoneum retains its power of forming adhesions it will isolate a tube or tubes in twenty-four hours. When the peritoneum has lost this power to form limiting adhesions, it means that Nature's resistance is at an end, and though in this case the tube may function as a drain, it will be quite useless in face of the unlimited spread of septic infection.

Certainly at the end of forty-eight hours, probably at the end of twenty-four hours, the great majority of tubes are draining nothing but their own track, and while they are doing this they are also helping on secondary infection, stimulating irregular intestinal movements, and so assisting in the spread of the infecting organisms, and are probably scrubbing a hole in the intestinal wall, with the possible production of a faecal fistula.

Surely, in face of the facts, we should recognize that the function of a drain is simply to facilitate the escape of deleterious matter to the surface of the body. A drainage apparatus should only be retained until it is reasonably sure that exit to the surface is freer than penetration in any other direction.

Mr. Steward omits to mention the two places where a drain is really seen at most advantage: these are those cases of pelvic abscess which can be drained into the vagina or rectum; even here it is not good to leave a drain in for more than a few hours. In the first case quoted by Mr. Steward it seems most probable that the paralysis of the ileum was due to trauma from the tube.

I cannot see that Carrel tubes will act in any way different to the usual; they will be more numerous, and constant irrigation may to a certain extent militate against the formation of adhesions, though this is not altogether to the good. The constant stream of saline may be useful in retarding a secondary infection, but it may be equally effective in aiding the spread of the primary infection, especially if it hinders the formation of adhesions. Case I would, I think, have done quite as well with dependent drainage through the vagina. Case II does not convey any conviction of the superiority of the method, in view of its subphrenic abscess and empyema. Case III is just an ordinary one, with nothing very remarkable about its recovery. Case IV would have done equally well with vaginal drainage.

With regard to pituitrin, it has seemed to me on several occasions rather to favour the development of cardiac weakness, and that its action is in no way better than that of eserine or strychnine.

I have written at length because Mr. Steward's lecture appeared to me to tend to encourage the undue retention of tubes—a practice which is too prevalent already.—I am, etc.,

Watford, April 29th. J. C. BARKER.

AORTITIS AND AORTIC REGURGITATION.

SIR,—Dr. Fisher (April 24th, p. 586) expresses the opinion that in my remarks I have not laid sufficient stress upon the associated myocarditis. The fact that the syphilitic virus gives rise to arteritis, aortitis, endocarditis, and myocarditis is known, but how to apportion the signs and symptoms to the separate lesions is difficult. The cases of aortic regurgitation in which myocarditis is the most dangerous lesion are probably the most numerous. On the other hand, in cases in which retro-sternal pain and dyspnoea on effort—or even at rest—are the most prominent symptoms, I would consider the aortitis to be the more important factor.—I am, etc.,

Belfast, April 26th. JOHN E. MACILWAINE.

Obituary.

SIR HENRY BURDETT, K.C.B., K.C.V.O.

WE regret to record the death of Sir Henry C. Burdett, on April 29th, at his house in Porchester Square. His services in the cause of the voluntary hospitals, and his knowledge of hospital administration and finance during more than fifty years had earned for him a unique position in the hospital world.

Henry Charles Burdett was born in March, 1847; his father was the rector of Gilmorton, Leicestershire, a living which had been held by members of the Burdett family for several centuries. He began life in a Birmingham bank, but at the age of 21 was appointed secretary to the Queen's Hospital in that city. His great ability and enterprise soon became evident in that post, and he had a large share in linking up under one management the two medical schools which then existed in Birmingham. There also began his life-long concern for the training and welfare of nurses. In the early seventies his interest in medicine induced him to enter as a medical student at Guy's Hospital. It may be doubted whether he seriously thought of going on to qualification, but his period of medical study gave him an insight into hospital matters from a new angle, and in after-life he always took pride in speaking of himself as an old Guy's man. In the autumn of 1874 he was elected superintendent of the Seamen's Hospital at Greenwich. In 1883, when he was appointed secretary of the Share and Loan Department of the London Stock Exchange, he was elected to the Committee of Management of the Seamen's Hospital Society; in 1896 he was elected a vice-president and so remained until his death. Despite the responsibilities of the new work in the City he maintained his keen personal interest in the voluntary hospitals and showed it in many ways. Thirty years ago he published the first edition of *Burdett's Hospitals and Charities*, an indispensable yearbook of reference on matters relating to hospitals and other philanthropic institutions. In introducing the last edition to the public, Sir Henry Burdett spoke of the happiness he had derived from "fifty busy years in the cause of the sick, their treatment, nursing, and progressive welfare," and added that this might be the last preface that he would address to the readers of "Burdett." During his Stock Exchange days, which ended in 1897, and afterwards, his eloquent appeals on behalf of charitable objects charmed many thousands of pounds out of the pockets of rich men. He did a great service to the nursing profession by organizing, thirty years ago, the National Pension Fund for Trained Nurses and Hospital Officials. In this he had the active support of King Edward and Queen Alexandra (then Prince and Princess of Wales), who entertained for him a high regard and showed it often. In the year of the Diamond Jubilee his public services were rewarded by the K.C.B., and in 1908 King Edward created him a K.C.V.O. Sir Henry Burdett was the active spirit in starting what is now the King's Hospital Fund for London; he never missed a meeting of the council from the foundation of the Fund in 1897 until last year. He had an important share also in the foundation of the League of Mercy. Again, he was the acknowledged originator of the uniform system of hospital accounts; others improved and extended it, but the idea was his.

Sir Henry Burdett was a voluminous writer on hospital and nursing topics, on finance, and on various aspects of politics and public life. He was the founder and editor of the *Hospital*, a weekly organ of administrative medicine and institutional life, while the *Nursing Mirror*, which began as a supplement to that paper but has long been issued separately, gained great popularity under his guidance. He paid many visits of inspection to the hospitals of the United Kingdom, and during his foreign tours he studied the work and organization of medical charities in the United States and on the Continent. The outcome of these inquiries was his large work *The Hospitals and Asylums of the World*, in four volumes, with a comprehensive portfolio of plans. He had an almost fatherly feeling towards medical matters and the work of the medical profession. He missed no opportunity to use his influence in the advancement of medical science and practice, and showed warm interest in post-graduate education. At the annual meeting of the British Medical Association at Brighton in 1913 he took part by invitation in a discussion on "Hospitals in Relation to the State, the Public, and the Medical Profession" in the Section of Medical Sociology. He there expressed the view that, but for the services the hospitals were rendering, the Insurance Act would be a dead letter. He argued, too, that if only for financial reasons a whole-time salaried state medical service would never come to pass. Lady Burdett, whom he married in 1875, was a daughter of the late Mr. Gay Shute, F.R.C.S.; she died last year.

A former colleague writes: Those who at any time worked in close association with Sir Henry Burdett and visited him at The Lodge, Porchester Square, knew him as a kindly, hospitable, home-loving man. Until quite recent years, when death took one after another from the home circle, he was singularly happy in his family life. He was always to be found in the large library on the ground-floor, everlooking the lawn, where he spent a large part of the day, and did most of his work. Even through a personal talk he never could quite subdue the instinct for oratorical effect, for the dramatic pause with glittering eye and wide-armed gesture. His books and articles were dictated to an invisible audience, and as a result his literary work had often something of the diffuseness and floridity of platform speech, with the characteristic personal touch caricatured a little by cold print. Nevertheless he was an accomplished and alert journalist, eager for the success of his papers and well versed in the various branches of editing and publishing. His mind in general moved along large lines towards large objectives; but, while he much preferred to depute the working out of details to others, he could if need be get down to the smallest parts of a big scheme and handle them with bold dexterity. He was a man of strong and commanding personality, by no means an "intellectual" but with very great mental powers. The qualities that especially stand out in the memory of Sir Henry Burdett are his unquenchable enthusiasm, the bigness of his ideas and projects, and his persuasive eloquence. As a colleague he was most kind, courteous, loyal, and considerate; he could not be shaken from his opinions, but when he said he would do a thing he kept his word.

A. J. CHALMERS, M.D., F.R.C.S.,
Khartoum.

WE announced some time ago the death in Calcutta from pneumonia of Dr. A. J. Chalmers, who was best known to the profession as the author, with Dr. Castellani, of the large *Manual of Tropical Medicine*, which is the most comprehensive and detailed work on the subject in existence. Albert John Chalmers was born in Manchester in 1870, and received his medical education in the University Colleges of Liverpool and London. As a student his career was brilliant; he graduated M.B., Ch.B.Victoria in 1890, and in the same year was appointed Holt Fellow of the Liverpool College, a position he held for two years. When he graduated M.D.Vict. in 1893 he took the Gold Medal. He became F.R.C.S.Eng. in 1895. In 1897, probably more from a desire to become acquainted with tropical life than from any intention to follow it as a career, he joined the West African Medical Service; he served in the Ashanti war of 1900, was a member of the garrison that fought its way out of Coomassie, was mentioned in dispatches, and received the medal with clasp.

He was appointed registrar of the Ceylon Medical College in 1901 and did much to improve its organization and raise the standard of teaching, which is now at a high level. When he resigned in 1902 he gave full bent to his inclination to devote himself to the parasitology, bacteriology, and general pathology of tropical diseases. One outcome of this period was his share in the *Manual*, the first edition of which appeared in 1910, and the third last year. He afterwards gave much attention to pellagra and travelled widely, some of his journeys being made with Dr. Sambon to study the distribution of the disease, the occasional occurrence of which in England he was one of the first to recognize. He became Director of the Wellcome Tropical Research Laboratory at Khartoum in 1913, and since then has been responsible in whole or in part for a long series of papers on a large variety of subjects in tropical medicine. He was a member of the Sanitary Board,

of the Sleeping Sickness Commission and of the Archaeological Committee of the Sudan. Dr. Chalmers was industrious and accurate in research, and had a wide and intimate acquaintance with the rapidly growing literature of the department to which he had devoted himself. His premature death while on a holiday journey eastward round the world is a loss to tropical medicine.

DR. JOHN LIDDLE CROMBIE, who died at North Berwick on May 1st, aged 77, was for many years associated with the health offices of that well known and popular watering place at the entrance to the Firth of Forth. He graduated M.D. at Edinburgh University in 1863, having taken the diplomas of L.R.C.S. and L.R.C.P.Edin. in the previous year. After acting as house-surgeon to Perth Infirmary his lot was cast in North Berwick, where he quickly gathered together a large private practice. He became parochial medical officer and medical officer of health, as well as certifying factory surgeon. For a time he was Surgeon-Colonel (V.D.) 7th V.B. Royal Scots, and he was also surgeon and agent for the coastguard. He was honoured by his professional brethren by being elected a member of the Harveian Society, and his interests outside medicine were shown by his connexion with the Berwickshire Naturalists' Club.

To all who knew Dr. JOSEPH WILLIAM HUNT, who practised so long in Hackney, the news of his death on April 17th, after a long and trying illness, will come as a sense of loss, for though a man of retiring disposition, contented quietly to do his daily round of duty, he was endowed with abilities out of the ordinary, and a character of no common elevation. He was born in 1851 in Canada, where his father was a missionary. He came to England when 12 years old and entered University College Hospital Medical School with an exhibition at an early age. He took the degree of B.Sc.Lond. in 1876 and in the same year at the M.B. won a gold medal in medicine; in the following year he won the gold medal at the M.D. examination. After holding the appointment of house-physician to University College Hospital he became resident medical officer; he then went to Wolverhampton, where for four years he was physician to the General Hospital. In 1881 he settled in practice at Hackney in partnership with the late Dr. Daly, and soon won the affection and respect of his fellows. He had held the office of vice-president of the Metropolitan Counties Branch and chairman of the City Division of the British Medical Association; he was also at various times president of the East London Clinical Society and the Aesculapian Society. He was an earnest churchman, and lived a self-denying, consistent, and useful life. For many years he was the local secretary to Epsom College, and his work as one of the trustees of the Spinstowe Charity, and for the deaf and dumb at the Asylum at Clapton, was much valued.

Universities and Colleges.

UNIVERSITY OF OXFORD.

MR. EDWARD WHITLEY has offered to the University the sum of £10,000 towards the endowment of a professorship of biochemistry, and the British Dye-Stuffs Corporation has made a donation of £5,000 towards the cost of extending the laboratory of organic chemistry. Decrees accepting these munificent and timely gifts are being proposed in Convocation this week.

UNIVERSITY OF CAMBRIDGE.

AT a congregation on April 30th the following medical degrees were conferred:

M.D.—R. N. Chopra (admitted by proxy) and C. Worster-Drought.
M.B. AND B.CH.—A. W. Uloth, C. M. Billington, M. L. Young, G. L. Smith.
M.B.—C. R. Wright.

UNIVERSITY OF LONDON.

Advanced Lectures in Physiology.

PROFESSOR E. MELLANBY, M.D., began a course of lectures on nutrition, at King's College for Women (household and social science department), Campden Hill Road, Kensington, on May 3rd, at 5 p.m. The remaining lectures of the series will be given on May 10th, 11th, 17th, 18th, and 31st, and June 1st. A course of eight lectures on the biochemistry of sterols will be given by Mr. J. A. Gardner, M.A., F.I.C., University Reader in Physiological Chemistry, in the physiological laboratory of the University (South Kensington), at 5 p.m. on Tuesdays from May 18th to July 6th. The lectures are addressed to advanced students of the University and to others interested in the subject. Admission is free.

UNIVERSITY OF GLASGOW.

MEDICAL CURRICULUM.

AT a meeting of the General Council on April 28th a subcommittee reported that the summer term was the most advantageous time for the commencement of studies in the medical school. Members of the medical faculty were unanimous on the point, but the co-operation of the schools and of the education department would be needed. The matter will be further considered at a meeting of the University Court.

UNIVERSITY OF ST. ANDREWS.

AT the meeting of the University Court, on May 1st, Dr. John Taylor was appointed to the lectureship in regional anatomy, Dundee, and Dr. L. T. Price, surgeon to the Dundee Royal Infirmary, to that in diseases of children.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary comitia of the Royal College of Physicians was held on Thursday, April 29th, when the President, Sir Norman Moore, was in the chair. The President announced that Professor C. S. Sherrington had been appointed the representative of the College on the Committee to consider a memorial of the late Professor Sir William Osler.

MEMBERS.

The following candidates, having passed the required examination, were admitted as Members:

Robert Allen Bennett, M.D.Lond., L.R.C.P.; Francis Bernard Chavasse, M.D.Oxf., L.R.C.P.; Thomas Forrest Cotton, M.D.McGill; John Alexander Drake, M.B.Lond., L.R.C.P.; Arthur Wm. Mickle Ellis, M.B.Toronto; Francis Richard Fraser, M.B.Edin.; Joseph Gatt, M.D.Malta, L.R.C.P.; Mary Esther Harding, M.D.Lond.; Harold William Hills, M.B.Lond., L.R.C.P.; George Johnson Langley, M.D.Lond.; Elias Leopold Woolf Mandel, M.D.Lond., L.R.C.P.; Edward Manother, M.D.Lond.; Henry Bret Russell, M.B.Lond., L.R.C.P.; Evelyn Dennis Scott, M.B.Lond., L.R.C.P.; Hugh Stannus Stannus, M.D.Lond., L.R.C.P.; Margaret Grace Thackrah, M.D.Lond.; Robert Heywood Wilshaw, M.D.Lond.

FELLOWS.

The following were elected Fellows on the nomination of the Council:

William Francis Menzies, M.D.Edin.; James Graham Forbes, M.D.Camb.; William Morton Robson, M.D.Lond.; Samuel Ernest Dore, M.D.Camb.; George Basil Price, M.D.Lond.; Eardley Lancelot Holland, M.D.Lond.; Albert Ramsbottom, M.D.Vict.; Arthur Stanley Woodwark, M.D.Lond.; Francis Graham Crookshank, M.D.Lond.; Arthur Charles Douglas Firth, M.D.Camb.; Nathan Mutch, M.D.Camb.; Francis Martin Rouse Walshe, M.D.Lond.; George Graham, M.D. Camb.; George Ernest Beaumont, M.B.Oxf.

UNIVERSITY OF LONDON.

Dr. Fawcett and Sir Wilmot Herringham were appointed representatives of the College on the Senate of the University of London in place of Dr. Sidney Martin and Sir Seymour Sharkey. The thanks of the College were awarded to the retiring members for their services.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

A report was approved from the Committee of Management containing regulations for the Diploma in Psychological Medicine (D.P.M., R.C.P. and S.Eng.) drawn up after a conference with teachers in the various subjects. The examination will be held in two parts, in June and December. A candidate may enter for Part I at any time after obtaining a registrable medical qualification, and the two divisions may be taken separately or together. The subjects of examination will be (*a*) anatomy and physiology of the nervous system, (*b*) psychology. After passing Part I a candidate may enter for Part II of the examination on the completion of a year of special study subsequent to obtaining a registrable medical qualification. Candidates will be required to produce certificates (*a*) of having attended clinical instruction for at least two months at a recognized hospital for nervous diseases, or in the department for nervous diseases at a recognized hospital; (*b*) of having held a resident appointment at a recognized institution for mental diseases where clinical instruction is given, for at least six months, or of having attended clinical instruction in psychological medicine at a recognized institution during twelve months. The subjects for examination for Part II are (*a*) neurology, including clinical and pathological neurology, and (*b*) psychological medicine, including its legal relations. The conditions of study may be modified by the Committee in the case of a candidate (*a*) who has carried out original investigations or has written a thesis on psychology or neurology in relation to psychological medicine, or (*b*) whose studies have extended over a prolonged period without fulfilling the exact conditions, but exemption will not be granted for any part of the examination. Graduates in medicine or surgery of Indian, colonial, or foreign universities recognized by the Examining Board in England, but whose degrees are not registrable in this country, may enter for the examination by fulfilling the same conditions in regard to study. The fee for admission or readmission to each part of the examination is six guineas.

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.

A similar report embodying regulations for the Diploma in Ophthalmic Medicine and Surgery (D.O.M.S., R.C.P. and S.Eng.) was also adopted. The examination will be held in two parts, in January and July. A candidate may enter for Part I at any time after obtaining a registrable medical qualification. He must present himself for the whole of Part I, but if he fail in one division only will be allowed to present himself for re-examination in that division. The subjects of examination will be (*a*) anatomy and embryology of the visual apparatus (including the contents of the orbit, the bones in the neighbourhood thereof, and the central nervous system so far as it relates to vision); (*b*) the physiology of vision; (*c*) elementary optics. After passing Part I a candidate may enter for Part II on completion of one year of special study of ophthalmology subsequent to obtaining a registrable medical qualification. Candidates will be required to produce certificates of having (*a*) specially studied ophthalmic medicine and surgery and general medicine in its relation to ophthalmology for a period of twelve months; (*b*) engaged in the investigation and correction of errors of refraction; (*c*) attended the clinical practice of a recognized ophthalmic hospital or ophthalmic department of a recognized general hospital for twelve months; (the conditions may be fulfilled by holding the appointment of house-surgeon or house-physician or clinical assistant at one of the above hospitals or departments, provided that in the case of a clinical assistant the certificate shows that he has attended for at least three hours a day on two days a week); of having (*d*) attended a practical course of operative ophthalmic surgery, and (*e*) attended a course of pathology and bacteriology with special reference to ophthalmic medicine and surgery. The subjects of the examination for Part II are (*a*) optical defects of the eye; (*b*) ophthalmic medicine and surgery; (*c*) pathology, with special reference to medical and surgical ophthalmology. These conditions may be modified in the case of a candidate (*a*) who has carried out original investigations in any branch of the examination; (*b*) who has written a thesis on the pathology of the eye; (*c*) whose studies have extended over a prolonged period without fulfilling the exact conditions, but exemptions may not be granted from any part of the examination. Graduates in medicine or surgery of Indian, colonial, or foreign universities recognized by the Examining Board in England, but whose degrees are not registrable in this country, may enter for the examination for the Diploma in Ophthalmic Medicine and Surgery on fulfilling the same conditions in regard to study. The fee for admission or readmission to each part of the examination is six guineas.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates have passed the examination of the school at the termination of the sixty-second session, February–April, 1920:

*H. E. Whittingham (Duncan medal), *A. K. Cosgrave, *A. Khalik, *E. J. Wood, *E. Forrester-Paton, J. Fanstone, E. G. Mack, W. P. Hogg, J. S. Armstrong, J. R. C. Stephens, M. Wong, G. A. S. Madgwick, G. A. Frendo, C. Basile, M. Jackson, E. U. MacWilliam, N. Nedergaard, H. R. Dive, J. R. Crolius, J. Gray, A. Y. Cantin, D. Schokman, C. H. Brangwin.

* With distinction.

Medical News.

THE University of London announces that M. Pierre Janet, Professeur de Psychologie au Collège de France, Paris, will next week give a course of three lectures on "La Tension Psychologique, ses Degrés et ses Oscillations." The first lecture will be given at the house of the Royal Society of Medicine, 1, Wimpole Street, W., at 5 p.m. on Tuesday, May 11th. The two other lectures will be given at the same hour on Wednesday and Thursday. The lectures, which will be delivered in French and will deal in part with the medical aspect of the subject, are addressed to advanced students of the university, but others interested are invited to attend. Dr. Henry Head, F.R.S., will take the chair at each lecture.

THE Ministry of Health has issued a Statutory Order, which came into operation on May 1st. It requires the M.O.H. of a city or borough council to send a copy of each certificate or notification of a case of acute primary pneumonia, acute influenzal pneumonia, malaria, dysentery, trench fever, acute encephalitis lethargica, and of ophthalmia neonatorum—whether notified by a medical practitioner or by a certified midwife—within twelve hours of its receipt, to the Metropolitan Asylums Board, who will repay to the borough council or to the common council the fee paid in respect of such notification.

AT the Leigh (Lancashire) Borough Police Court, on April 22nd, the Lancashire County Council took legal proceedings against Charles C. Abbott, "herbal specialist," of 56, Railway Road, Leigh, for treating a person for venereal disease and prescribing a remedy therefor contrary to Section 1 of the Venereal Disease Act, 1917. A fine of £10 was inflicted.

DR. J. F. MACDONALD, D.P.H., of the Middle Temple, and Dr. G. D. H. Wallace, of Gray's Inn, were called to the bar on April 28th.

THE Congrès Français d'Oto-Rhino-Laryngologie, which will be held in Paris next week (May 10th to 13th), will be attended by a number of British specialists.

NOTIFICATION of lethargic encephalitis was made compulsory in Denmark at the beginning of this year. By the end of January 29 cases had been notified, some of them dating back to July and August, 1919. Among them four deaths had been recorded, but in two the diagnosis was uncertain. The Pathological Institute of the University of Copenhagen has undertaken to examine *post-mortem* specimens.

CASES of lethargic encephalitis have recently appeared in various parts of Spain.

THE University of Birmingham has arranged for a post-graduate course of instruction to be given in the Medical Faculty, Edmund Street, Birmingham, and at associated hospitals, from Monday, July 5th, to Saturday, July 17th, both dates inclusive. The course will comprise sections of medicine, surgery, pathology and bacteriology, obstetrics and gynaecology, diseases of children, ophthalmology, diseases of the ear and throat, radiology, electrical treatment, and anatomy and physiology. The fee for admission to the lectures and clinical demonstrations in each section is one guinea. Further particulars can be obtained on application to the Clerk to the Clinical Board, University, Edmund Street, Birmingham.

IT has already been announced that the eleventh session of the Australasian Medical Congress (the first since 1914) will be held at Brisbane under the presidency of the Hon. W. F. Taylor, M.D., from August 23rd to August 28th, a season in which the climate of Queensland is usually agreeable, the maximum temperature being on the average 72.4° and the minimum 50.7°. The Executive Committee of the congress invites any member of the Association who may be visiting Queensland at the time to attend as an honorary member. Any one who thinks of accepting should communicate with Dr. Wilton Love, the honorary general secretary in Brisbane, at once, as the accommodation is limited. The principal subject for discussion will be the question of the permanent settlement of a healthy white race in tropical Australia. It is expected also that the contributions to the sections of naval and military medicine and surgery will be of unusual interest.

THE half-yearly dinner of the London Aberdeen University Club will be held at the Criterion Restaurant on Thursday, May 20th, at 7.30 p.m. The annual general meeting will take place at 6.30 p.m. Further particulars can be obtained from Dr. W. A. Milligan, 11, Upper Brook Street, W.1.

SIR EDWARD SHARPEY SCHAFER has thoroughly revised his *Essentials of Histology*, and the new (eleventh) edition will shortly be published by Messrs. Longmans.

THE shortage of the supply of paper is becoming an even more serious problem to periodical publications than the rise of price, great as that has been. Newspaper proprietors have been giving evidence before a Subcommittee of the Senate of the United States; one of them asserted that if consumption proceeds at the present rate there will be no paper-pulp producing forests left in twenty-five years. The only remedy so far suggested is to decrease the size of papers and periodicals and increase advertising rates.

WE are asked to state that the subscription (35 francs), to be paid by those who propose to attend the Congress of Physiology which will be held under the presidency of Professor Charles Richet in Paris from July 16th to July 20th, should be sent as soon as possible to M. Lucien Bull, Secrétariat du Congrès, Sorbonne, 1, Rue Victor Cousin, Paris, V, from whom a list of hotels with which special arrangements have been made can be obtained. The titles and summaries, not exceeding twenty-five lines, should be received by the secretary of the congress not later than June 1st. There will be an exhibition of apparatus and instruments. The last Congress of Physiology was held at Groningen in September, 1913.

SIR ARTHUR SHIPLEY prefaced his lecture to the Child-Study Society on April 29th on "Biting insects and children" (to which title *Punch* has alluded) with the remark that as a bachelor he knew less about children than he did about insects; accordingly his lecture was devoted to an entomological description (with literary and historical digressions) of lice, bugs, and fleas, with no particular reference to the special susceptibilities of children or to preventive measures which may be taken on their behalf. In the course of discussion the

question arose whether it was possible to secure personal immunity from fleas. Sir Arthur said that the essential oils, especially the oil of cedarwood, were supposed to keep fleas away, but the personal factor was so large in these cases that no means could be absolutely relied upon. Dr. C. E. Wallis said that in some correspondence on the subject which appeared in the BRITISH MEDICAL JOURNAL about eight years ago it was stated that the taking of two or three sulphur lozenges would render a person unpalatable to fleas. He had found that procedure of no use whatever, but he had discovered one preventive measure which in his personal experience had proved most successful. When he was a student doing midwifery he had to take lodgings in Clare Market, and found himself attacked the first night by a host of fleas. He decided that drastic counter-measures were necessary, and therefore applied with a sponge a 1 in 20 carbolic solution to his neck, wrists, and ankles, believing that these must be the means of entrance whereby the insects invaded the person. As a result he was immune from fleabite during the remainder of his month's stay. Sir John Cockburn, the chairman of the meeting, remarked that in Australia there were such things as flea storms, whirlwinds of fleas, which covered the verandahs of the houses. Stock breeders in Australia paid a good deal of attention to the question of susceptibility to insect bite, and animals much subject to the bites of fleas and flies were not allowed to breed.

THE honour of O.B.E. has been conferred upon Mr. Edmond Thomas Gann, M.B.E., Secretary Army Medical Advisory Board and Army Sanitary Committee.

AS cases of small-pox have occurred in and around London during the past few weeks, and some of these have remained undiscovered for a considerable time after the first appearance of the disease, the London County Council draws attention to the arrangements under which in doubtful cases the practitioner confers with the M.O.H. of the borough, and to the fact that, should a further opinion be required, on application to the Public Health Department, the services of Dr. W. McC. Wanklyn will be available.

Letters, Notes, and Answers.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

"L. C." writes: A patient, aged 52 years, suffers from a continuous saline taste in the mouth; the taste is like saltpetre. The patient is in good health and apparently quite sound; he has had some pyorrhoea, and is subject to lumbago and sciatica. He smokes about twenty cigarettes a day. The taste is worst in the morning, and improves as the day goes on.

INCOME TAX.

J. I. H. explains that in 1918 the local inspector of taxes asked that his figures should be verified by a chartered accountant, and that it was found that the sums returned for assessment had been insufficient. The inspector now asks that the years subsequent to 1918 should be dealt with on the basis of figures prepared by a chartered accountant. Is he justified in this demand and in maintaining the assessment on a basis of a three years' average?

*** The three years' average is the statutory basis of assessment and is binding. The inspector has no legal right to require audited accounts; his statutory function extends only to the bringing of the case to the attention of the Assessing Commissioners, who may in their discretion ignore the return made by the taxpayer and make an estimated assessment in excess of that amount. In that event our correspondent would presumably lodge a notice of appeal, and the Commissioners to whom the appeal was directed would have the right of requiring full accounts of the receipts and expenses of the practice; non-compliance with that requirement would result in confirmation of the assessment. It will be seen that there is some ultimate claim for accounts on the part of the authorities, and, as our correspondent was not at one time able to make a correct return without professional assistance, we hardly like to advise him to refuse the inspector's request. Possibly he might arrange a compromise by offering to prepare the detailed statements himself—on the lines followed by his accountant in 1918—and to show his books to the inspector if necessary.

SPIRITUALISM AND MENTAL DISEASE.

DR. GERARD SMITH (31, Greville Road, N.W.6) writes: In order to support the contention that in the pursuit of "spiritualism" persons of a certain temperament are exposed to grave dangers, I am anxious to secure evidence—especially recent evidence—of cases of mental derangement brought about in this way. I should, therefore, be glad to receive notes or short statements of such cases. I have no concern with the truth or error of "spiritualism."

LETTERS, NOTES, ETC.

PROPOSED TAXATION OF MOTOR CARS.

DR. W. BERNARD SECRETAN (Reading) writes with reference to the Government's intention to allow no rebate on the taxation of doctors' cars. Unless the profession makes its voice heard it will receive the usual official treatment meted out to those who are not too importunate or dangerous. I suggest that every medical man make a point of writing at once to his Member of Parliament, pointing out the harshness of the no-rebate proposal. Points might be made of (1) the falsity of the argument that doctors stand to gain more than the average motorist by the abolition of the petrol tax on account of their large mileage, since doctors have only paid in the past half this tax; (2) the unfairness of taxing two cars kept by one doctor, only one being used at a time, at the full rate; (3) the bad policy of a scheme which tends to hinder instead of increase the efficiency of the medical service of the country. No doubt other arguments will occur to many.

*** Accounts of the action taken by the British Medical Association have been published in the BRITISH MEDICAL JOURNAL during the last three weeks. An account of the proceedings at the deputation to the Ministry of Transport will be found in the Current Notes of the SUPPLEMENT for this week.

OPHTHALMIC OPERATIONS.

LIEUT.-COLONEL F. P. MAYNARD, M.B., F.R.C.S., I.M.S. (retired), writes: In your issue of May 1st it is stated that Grimsdale and Brewerton's *Textbook of Ophthalmic Operations* "is the only one of its kind on this special subject in our language." May I be permitted to point out that this is incorrect? In your columns for 1908 (vol. ii, p. 200) there is a review of my *Manual of Ophthalmic Operations*, a second edition of which will be published in a few weeks.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 29, 30, 33, 34, 35, 36, and 37 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 31, 32, and 33.

THE post of specialist medical referee under the Workmen's Compensation Act, 1906, for ophthalmic cases in County Court Circuit No. 6, is vacant. Applications should be made to the Private Secretary, Home Office, by May 26th.

THE following appointments of certifying factory surgeons are vacant; Ballindalloch (Banff), Cardenden (Fife), Ellesmere (Salop), Leicester, West (Leicester).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	7	6
Each additional line...	0	1	3
Whole single column	6	0	0
Whole page	16	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste-restante* letters addressed either in initials or numbers.